

SOUTHERN TEXTILE BULLETIN

VOLUME 27

CHARLOTTE, N. C., THURSDAY, NOVEMBER 13, 1924

NUMBER 11

More Looms Per Weaver With Northrop Looms

Than with any other Loom ever built! Forty, forty-eight, fifty-four! You marvelled at these figures when you first heard them. What are you going to say when you learn what some of your neighbors have been doing? The limit hasn't been reached. Operators are just beginning to realize the possibilities. The Northrop Loom is better than its best friends have realized. Every day another mill discovers a new meaning to the facts we have been emphasizing.

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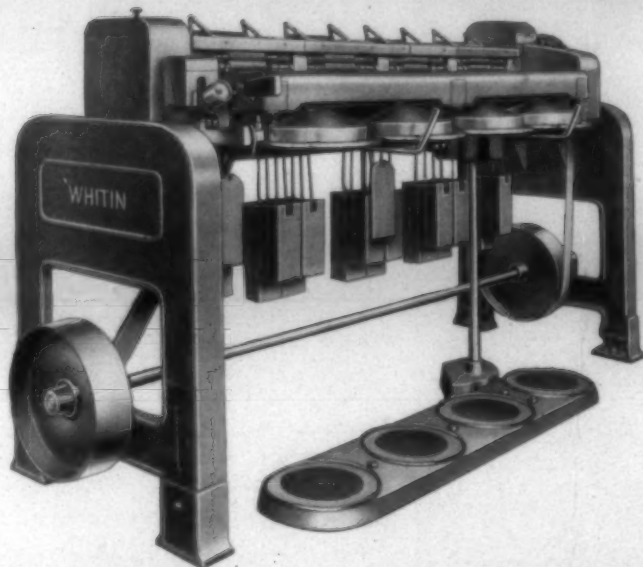
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1924

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THE delightful modern creations in crinkled bed spreads, both in plain and silk stripes, are typical of the products of this group of mills, one of the best known in the South.

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The growth of this company has called for additions and extensions to its several plants. Some of these have been of such a character that the services of the Engineer were important in co-ordinating the design of buildings and arrangement of machinery with economical production schedules. The engineering work was entrusted to this Organization.

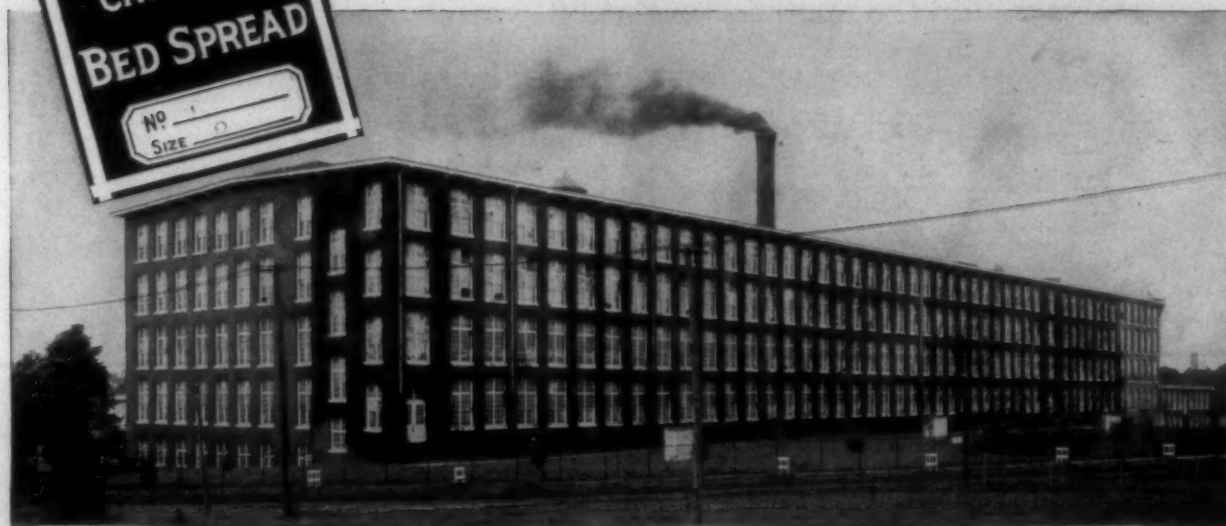
A quarter century of experience, accumulated in serving more than 800 industrial clients, is available to you. A conference with a member of this Organization will involve no obligation.

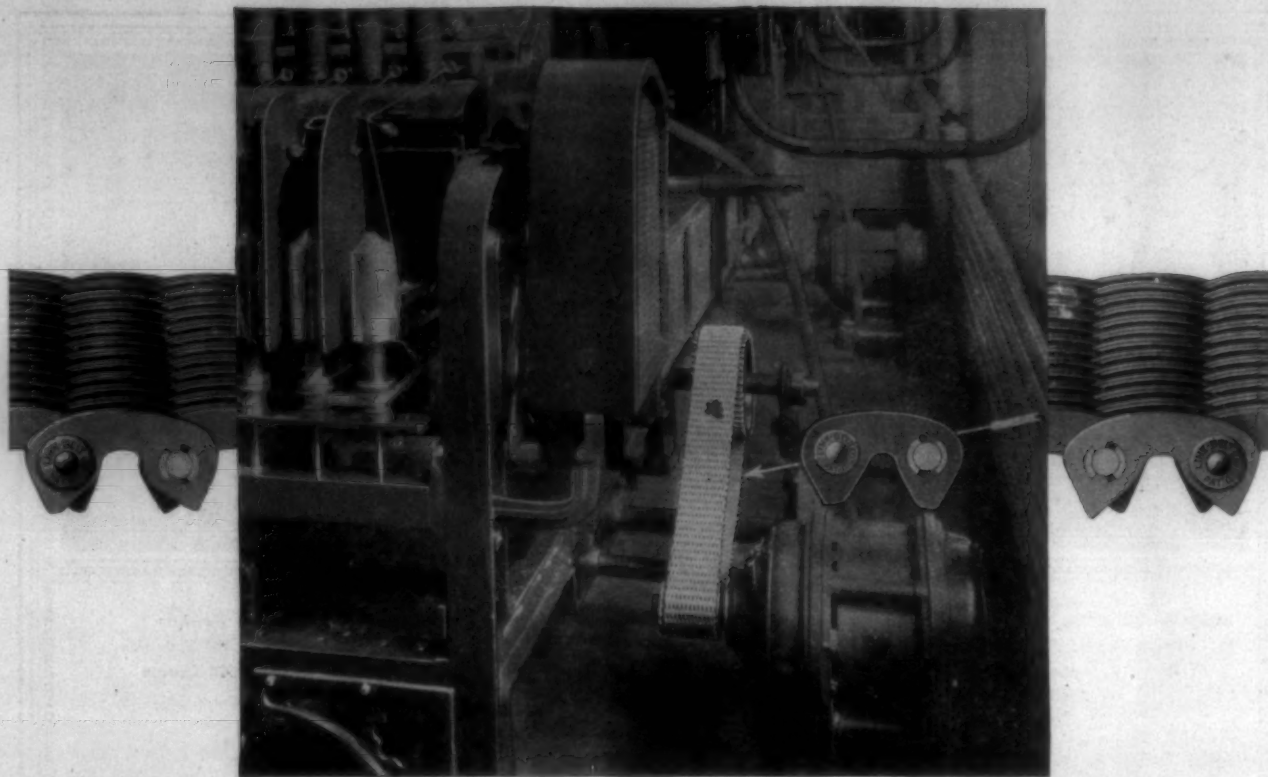
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SOUTHERN TEXTILE BULLETIN

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CHARLOTTE, N. C., THURSDAY, NOVEMBER 13, 1924

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Significant Savings in Textile Mill Operations

THE cotton manufacturing industry is old and well-established in New England, starting over a century ago. It has been for a long time its largest and most important industry. In general it has not given as intensive study to the possibilities along the lines of "Scientific Management" as some of the other industries. Tradition and old customs have played a very important part in the operation of a cotton mill. The industry has been seriously handicapped by customs, built up by the experience obtained in a century's existence. Henry Ford, in his book, "My Life and Work," tells in a few words about his business. "We fortunately did not inherit any traditions and we are not founding any. If we have a tradition it is this: Everything can always be done better than it is being done." The textile industry on the contrary has been built up by tradition. A mill agent whose opinion is held in very high regard has often said, in discussing the possibilities of remarkable savings in textile mill operations, that if a cotton manufacturer could get off to some place entirely isolated from other mill centres and build a new mill, hire all new people whom he could train properly, and build up new methods, the results would be startling! In some cases, however, old customs are being gradually overcome, and a new attitude is evident. Mill operatives, after they have been shown, realize the advantages to themselves which result from a rearrangement of their work. Mill managers, on the other hand, realize the necessity for increasing the efficiency of the operatives and machinery. They know that the most important step of progress is to break away from the long established methods of operation, in cases where the methods are obviously inefficient but difficult to break down because of custom.

There is urgent need for savings in textile mill operations at the present time, especially in the New England mills. The prices of cotton are high and will remain probably upon a much higher level than in previous years. Wages today are higher than ever and will remain probably upon a much higher level than that of about ten years ago. Much has been said in regard to the rapid development of the textile industry in the southern states. Twenty to twenty-five years ago there was hardly any cotton manu-

N. T. Thomas, Nashua Manufacturing Company, Nashua, N. H., before National Association of Cotton Manufacturers.

facturing outside of New England. Today there are twenty million spindles in New England and fifteen million in the cotton growing states. Since 1900, when there were fifteen million spindles in New England, and four and one half million in the South, there has been an increase on 34 per cent in New England against two hundred and forty-eight per cent in the cotton-growing states, according to the figures of the United States Department of Commerce. There is constant agitation in the legislatures of the New England States to bring about the enactment of 48-hour laws, which are aimed directly at the textile industry. The difference in the legal running time of the mills in New England and the South is a serious handicap to the industry here.

It is of great importance in striving for economy in the production of goods to have a good layout of machinery and buildings. In a continuous process, such as there is in the cotton mill, it is necessary to have a steady flow of material from operation to operation with no backward steps and with the minimum amount of handling. In drawing up specifications for a new mill, engineers and mill managers of today plan for a result which is radically different from the popular conception of a cotton mill. Reinforced concrete buildings with large windows replace the former brick mill construction with small windows. Dustless stripping systems in the card rooms are perfected, so that the card tenders are able to do "strippers" who usually work only. Automatically controlled heating and humidifying systems, which provide uniform temperature and humidity, result in better operating conditions and increased production throughout the mill. A "humidifier man" in each department to look after the old system of humidifying is unnecessary, because one or two men are able to look after the entire mill, the heart of the new system being located in the basement. Individual drives are important aids in increasing production and eliminating bad work due to overhead shafting troubles, and some saving is accomplished by eliminating shafting men in each department. Power floor-scrubbing outfits are means of savings, and

give better results as compared with the old method of having scrubbers in each department, who usually work a small percentage of their time.

Probably most of the long established mills move the material from operation to operation by means of hand trucks and freight elevators. Cotton storehouses in some cases are not located in the proper relation to the opening room, necessitating an auto truck with a crew of five or six men to transport cotton from storehouse to mill. In some cases, cotton is piled several bales high in the older types of storehouses, which result in extra labor and cost. Picker laps, boxes of roving and yarn are trucked to and from the elevators, and delivered by the elevator man to the carding, spinning, and weaving departments. The cloth rolls are piled on trucks and carried to the cloth room, usually at some distance from the weave rooms. This method means lap carriers, roving and yarn truckers, filling carriers, cloth handlers, and elevator men. It also means a large number of trucks and boxes, which take up valuable space and cause more or less confusion and represent a good deal of money in upkeep.

At the Jackson Mills, a complete conveyor system which handles the entire product from the raw cotton to the finished cloth is in operation. A good description of this system, with illustrations, written by Robert T. Kent, may be found in last April's issue of "Management and Administration." The bales of cotton, stored on the upper floors, are sent down a spiral chute to the opening room on the first floor. After passing through the machines, the cotton is blown through pipes to the sixth floor of the mill, where the picker room is located. The picker laps as they are made by the pickers are put into cradles on the conveyor, and delivered to the card rooms by means of a gravity-roller conveyor, a spiral chute, and a horizontal belt conveyor, from which the card tenders take the laps while the cradles are travelling along very slowly. The empty cradles continue on and are returned to the picker room on an inclined elevator. The boxes of roving and yarn are put on to horizontal belt conveyors by the machine

tenders as soon as they doff their machines, these boxes travelling by spiral chutes and conveyors to the spinning, dressing and weaving room, where they are automatically diverted on to unloading stations. The empty boxes and bobbins are returned on inclined and vertical elevators. The cloth rolls are put on to an inclined elevator as they are taken from the looms, and then a belt conveyor delivers them to platforms in the cloth room, which is located in another building across the yard.

In making use of a complete conveyor system, the material in process can be moved from one department to another with marked saving cost. In addition, the jobs are made easier for the employees, due to the special trucks which eliminate heavy lifting, and this increases the efficiency of the mill as a whole. The stock is in much better condition than in the average mill, due to the absence of trucking. There is a marked saving in the number of bobbins used in the carding and spinning rooms, due to the method of returning empty bobbins. There is constant and quick control of the amount of stock in process because the surplus, or storage, is wholly on the conveyor system.

New methods of operation, or a rearrangement of the work, result in economy and increased efficiency. Planning the work for each department in order to eliminate unnecessary waiting for material, and at the same time, to keep always a minimum quantity of stock in process is important. It is general practice for the overseer of each department to run a certain number of machines and to assume the responsibility of keeping the next department properly supplied. Without central control, however, there is constant fluctuation in departmental productions, friction between department heads, large stocks on hand, and decreased efficiency throughout the mill.

One of the problems is to keep the looms in operation by providing a supply of warp yarn on loom beams. In the preparation of these beams, the judgement and experience of the overseer of the dress room was formerly relied upon to determine the right number of each kind of warp beams. The weaving department also estimated the number to be required, but it was

(Continued on Page 10)

British Research Report

ELIMINATION of fats and waxes from textiles in process is accomplished much better by scouring the piece goods instead of the yarn, according to the report recently issued by the British Cotton Industry Research Association on its five-year study of outstanding textile production problems.

Moreover, the study definitely determined, says the report, that in distinguishing American from Egyptian cottons the important differential to be noted is not the amount but the character of the wax contained.

"The work has been extended," says the report, "to the determination of the amount and nature of the waxy material in 'world cottons' now used in the industry." The most significant result is that the characteristics of the wax, rather than its amount, afford a means of distinguishing Indian from American and Egyptian cottons.

"With the assistance of members of the association a study has been made of the elimination of fat and wax from both yarns and piece goods under normal conditions of scouring and bleaching. In general the results show that as regards efficiency the scouring of yarns compares unfavorably with the scouring of piece goods. As opportunity has arisen the effects of new or novel scouring processes have

been investigated and compared with the normal methods. The work is now being extended to determine: (1) The specific effect of chemicking on fat and wax, since very variable results were observed during the examination of commercially bleached yarns and fabrics; (2) the effect of emulsifying agents in scouring, and (3) the direct effects of steeping with water, acid, or different enzyme preparations and the influence of these on subsequent scouring. The work has been considerably facilitated by the presentation of an experimental high pressure kier by Messrs. Mather and Platt.

"In connection with the subject of bleaching the chief fundamental problems which have been attacked are the examination of oxycelluloses, the mechanism of oxycellulose formation, the properties of hydrocelluloses, and an investigation of the absorption of basic dyes by cotton. In this work an attempt is being made to interpret quantitative scientific measurements in terms of the common and well recognized properties of cotton. For example, it has been shown that the tendency of a bleached cloth to yellow on storage is the main practical interpretation of the measurement of copper number. Many of the fundamental data accumulated are capable of wide application in the

study of more immediately practical problems, of which the following may be quoted as examples:

Striped Piece Goods.

"One of the most difficult operations which the piece goods bleacher is called upon to perform is the bleaching of a gray ground in a woven material containing colored stripes since it is only within a narrow range of conditions that the desired effect—good white bleaching—can be produced unaccompanied by the undesirable effects, tendering of the cotton and modification of the color in the stripe—which readily occur simultaneously. The success which is at present attained in this type of bleaching is dependent upon the skill and experience of the bleacher rather than upon scientific knowledge of the proper conditions.

"It has now been shown that one factor more than any other, namely, the precise alkalinity or acidity of the chemie liquors is of great importance in successful bleaching where certain colors (for example Cibacone black) are present, and for these it is possible to lay down strict conditions which must be fulfilled in order to obtain the best effect. Many visits have been paid to the bleaching crofts of various members of the association with the object of determining the range of variation in bleaching liquors actually in use today and it has been

shown that there is at present no adequate technical control of the acidity or alkalinity of these liquors, a factor which even in pure white bleaching is frequently of much greater importance than the actual chlorine content of the liquor.

Yarns for Hosiery.

"This problem has been raised by a considerable number of members, both spinners and yarn dyers, who have experienced difficulty in producing mercerized hosiery yarns which, when knitted, yield levelly dyed hosiery. A large number of cases have been reported in which unevenness, frequently recurring regularly and producing an undesirable pattern, has led to a considerable percentage of rejects, and it is stated that a large proportion of the Canadian trade in mercerized hosiery yarns has been lost for this reason.

"Almost any fault in the manufacturing processes—spinning, doubling, mercerizing, knitting, bleaching and dyeing—may give rise to irregularities of some kind in the finished hose, and it is therefore very difficult in any specific case to assign uneven effects to a definite cause without possessing much more information about the processing of the goods than it is usually possible to obtain. Little progress could be made with this problem

(Continued on Page 33)

S. Roberts, President

ESTABLISHED 1919

C. M. Young, Treasurer

QUALITY

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The New Home of "Columbus Tape"



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The First Built in the South.

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HOUGHTON

MORE ABOUT HIDES

by Chas. E. Carpenter

IN the last issue I showed where Houghton selected their hides on the cattle—"on the hoof" is the term used in the trade—and I referred to the necessity of proper care of the hide from the time it is taken off until it is tanned.

In the ordinary course of things, where the hides are bought by a hide dealer, they are taken to the dealer's stores, salted and either piled, or rolled. Rolled is better. Then when he accumulates sufficient for a shipment and makes the sale, they are shipped to America, mostly New York, and here they are put in hide cellars and carried in stock until sold. Sometimes the market goes down and the hide man carries the hides in preference to selling at the market price. The hides may thus be carried indefinitely.

We are reputed to be the largest buyers of French hides in America, and it has not been unusual for us to stay out of the market for 6 months and twice we have been out for a year. This was in the days when we did what all others do now—bought from the New York hide dealer. Now if the New York hide dealer knows his business, he will salt his hides and repile them at regular intervals and he will keep them in unventilated, dark and damp cellars. But, of course, the hide man has employees and the handling of stinking hides is not a pleasant job at its best, and perhaps the employees follow orders and perhaps they do not. At any rate, the hides deteriorate every minute from the time they are taken off, until the

time they enter the tanning process. This deterioration is very slight at first and is more or less in accordance with the care the hide receives.

The care of the hide in the hold, in transatlantic shipment, is most important. Hides in hot holds, or where fumes from chemicals are apt to circulate, will deteriorate rapidly. Our direct Paris representatives—the Societe des Produits Houghton—exercise the utmost care in selecting shipping space, to see that our hides are not subjected to any unusually unfavorable conditions in transportation.

When our hides arrive in America, we do not put them in storage, as does the New York hide dealer, but we immediately put them into pickle, in which condition they will keep indefinitely, without deterioration. All of this costs more. It costs more to buy only hides inspected on the hoof; it costs more to personally handle our own hides; it costs more to engage special space on the steamer; it costs more to carry our hide stock in pickle; but we get the quality in return, and the fact that this quality is appreciated, is proven by not only the number of VIM Leather users, but by the well-known intelligence of those users, on the subject of leather belting.

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Oils and Leathers for the Textile Industry

Significant Savings in Textile Mill Operations

(Continued from Page 7)

largely a matter of guess work, because almost always there were a large number of beams on hand, but at the same time, several looms waiting for warps. A careful analysis of what looms actually required resulted in a prepared schedule of work for the dressing department to follow. This reduced the number of beams on hand from over six hundred to three hundred and eliminated all waiting for beams. It was found that one slasher could be stopped. Friction between the weaving and dressing departments was eliminated, and the loom production was increased because the looms were kept in operation. The stock in process was reduced considerably which a distinct advantage.

In the card rooms, the overseer formerly determined the number of roving frames to be run to supply the spinning frames. But usually there would be too much roving on hand or the spinning room would be short. The same was true of the filling yarn for the looms. Accordingly the work of the departments was coordinated for the purpose of having the proper supply of material on hand at all times. Now the work is planned, and each overseer has definite instructions to follow as to the constant operation of a certain number of machines, and there his responsibility to the following department ends.

Study and analysis of the various jobs in the mill, the nature of which have been determined by experience and custom, result in the development of new and better facilities for increased efficiency and significant savings. In the spinning room a study was made of the work of doffing the warp frames. There were three crews of doffers, each crew having a section of the frames to doff. At times, all three crews would be doffing, which resulted in an overflow of yarn to the spoolers. The outcome of the study was a rearrangement of the work. Special trucks are prepared in advance by yarn men, the boxes being enlarged to hold more bobbins. The work of doffing is scheduled so as to get a uniform flow of yarn to the spoolers. The crews of doffers work on larger sections as a result of this rearrangement, which greatly facilitated the work of doffing and reduced the stoppage of the spinning frames to a minimum.

A study of the men who handled the yarn and empty boxes in the spool room resulted in changing the spooler frames in order to eliminate dumping the yarn into trays on the frames. A change in the method of passing the yarn and picking up the spools and empty boxes made the work easier for the operatives and more economical for the management.

A study of the work of cleaning and sorting filling bobbins, returned from the weave room, resulted in building a special table, which facilitated the work tremendously. The

operatives were shown the best way to sort bobbins, and to prepare the boxes for the filling spinners, and although their earnings were increased, there was a saving in cost.

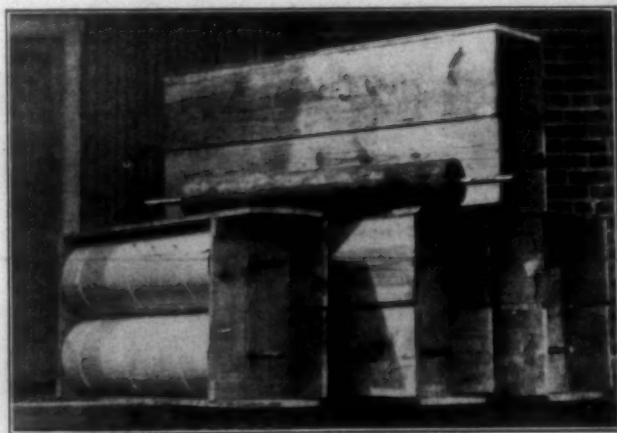
There were several men in the weave room picking up empty bobbins from the loom-cans. Each man did the work in his own way. After a study of this work, a special truck was provided and definite instructions issued as to the method to pursue. The result was a steady flow of empty bobbins to the spinning room and a saving in the number of men. The men now take care of more looms, the work being made easier by the new truck, and by the instructions as to how to do the work.

Standardization, as far as possible of product, of methods, and of equipment such as trucks and boxes, is a distinct advantage in the efficient and systematic operation of a cotton mill. Constant changes in roving, yarns, or styles of cloth reduce the efficiency of the machines and of the operatives. Where one standard number of yarn and one standard number of roving and one standard style of cloth are made, with no changing on the roving spinning frames, and looms, a great deal of productive time is saved. Where loom changes are frequent, careful planning is necessary in order to obtain the maximum efficiency and economy. Confusion and delay result where no standards are followed as to the size and number of boxes and trucks. At the Jackson Mills, boxes for the carding

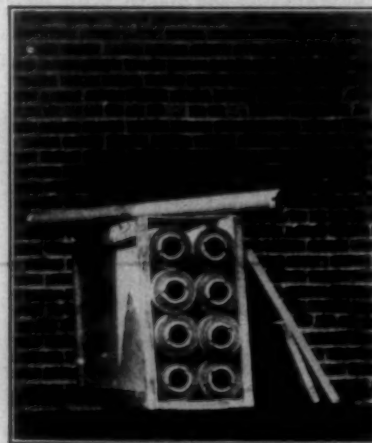
and spinning rooms are made and repaired according to standard specifications, and the trucks in the carding, spinning, and weaving rooms are of special design, carefully worked out to obtain the greatest benefit from the conveyor.

An excellent example of standardization of work is that of the slashers. Unless a proper amount of size has been added to the yarns, they will be unable to resist the weaving action of the loom and will break. Sometimes poor warp sizing will completely tie up the production of the weave room. According to previous practice, cotton mills operate their slashers almost hit or miss, allowing the tender to operate as he sees fit under the general direction of the overseer. There is no way of exact regulation of the final size and moisture content of the warps. At the Jackson Mills, this problem was attacked systematically. A survey was made at first to find out how much the yarns were already being sized and how far the work deviated in quality from the proper average. Analysis was made to show these values and to indicate whether the warps were being sent from slashers to weave room with necessary amount of moisture to insure good resistance to the tensional strains of the looms. After obtaining this information, the action of the slashers was studied and fifteen variable factors connected with their control were worked out as the causes of poor or good work according as

(Continued on Page 31)



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THE HANDY SHIPMENT
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Ira L. Griffin, *Manager*

Finishing of Lace and Light Cotton Fabrics

THE finishing of lace and similar goods depends upon the same principles as those which govern that of cotton cloth, but there are certain differences in details. These are due to the necessity of maintaining the pattern in an undistorted condition, the avoidance of loss of length, width or mechanical damage, and the production of a finish which will not deteriorate when the goods are stored or under the conditions of use. The "finishes" employed are of three kinds, viz.: (1) Pure finishes; (2) assisted finishes; (3) stiffened finishes. Pure finishes are only those in which no chemicals are employed, but only mechanical processes such as calendering, accompanied by the most complete removal of the natural impurities and coloring matters. An "assisted finish" is one in which a comparatively small proportion of one or more chemicals is used, to give additional effect to the mechanical processes employed. For example, a light application of starch helps to bring out and render permanent the full effects of calendering.

In the case of stiffened finishes, it is often the fabric that is disguised and not the chemicals. The term stiffened is applied to finishes in which stiffening, binding and weighting agents are employed to a much greater extent than in "assisted" finishes. But stiffened finishes are not simply a device to create a fictitious impression of the quality of the goods. It is only by their aid that certain classes of goods can be made either marketable or useful. Thus, in the case of curtains with an open, figured pattern, it is essential that the spreads should be provided with some mechanical support by means of a stiffened finish. Mechanical effects are produced chiefly by means of the stenter and calender. Stentering is particularly adapted to light goods. The chief effects produced are: (1) Recovery of width; (2) straightening out of the threads and establishing pattern; (3) drying by means of hot air whilst in the straightened condition; (4) producing a desired feel in the finished goods by the application of heat with or without special motions of the goods, termed "swissing." A stenter consists essentially of two extended, horizontal frames provided with means of supporting and stretching the fabric. The distance between the frames is adjustable, and the fabrics are gripped close up to the selvages. Thus, in woven goods, tension may be applied directly at the ends of the weft threads, straightening and stretching them simultaneously while in the damp condition.

Drying or heating is effected by a stream of air, heated in a tubular heater, and driven by a fan through this and an air duct, the latter delivering the hot air into funnels which direct it on to the underside of the fabric. For drying alone a revolving overhead fan is very commonly used. The motion, or "swissing," straightens out the

threads whilst under tension, but it affects also the dressing in the case of assisted or stiffened finishes. It is imparted by means of swivel brackets upon which the frame is supported.

The process of calendering consists of subjecting the prepared and dried goods to pressure between bowls heated by means of gas or steam. The effects produced by the calender depend upon many factors, such as the nature and sequence of the bowls, the pressure applied, the temperature, the nature of the goods and the dressing materials employed and the "conditions" or humidity of the fabric. In general, the bowls are "metal" or "soft," the latter being built up of cotton or paper on a metal core. Calenders containing three, five or seven bowls are commonly used, but when extra brightness is required, as in the case of certain light cotton goods, a ten-bowl calender is often employed. Soft and dull, or hard and bright, finishes may be produced at will. The sequence in which the bowls are arranged varies with the effect which it is desired to produce. Predominance of metal nips gives a hard, bright finish, but metal bowls are not used next to each other since their action would be too severe for the cotton to withstand. Friction may be applied to polish the upper surface of the goods by causing the upper metal bowls to revolve at a greater speed than the lower ones.

The following is an example of the sequence of processes suitable for lace or light cotton goods: (1) After bleaching, wash in a sutching mangle; (2) dry to the required degree of condition; (3) stiffen, for assisted finishes, in a two-wood or brass and wood mangle with starch; (4) stenter; (5) calender in the case of pure finishes, the third operation is, of course, omitted, whilst in assisted or stiffened finishes the absorption of starch may be limited by giving three nips in the calender before stiffening.

The materials used for assisted or stiffened finishes are not very numerous. The more important may be mentioned. They may be classified as follows:

(1) Stiffening and binding agents: The only uses to any extent are farina, maize starch, soluble or thin starch and dextrin.

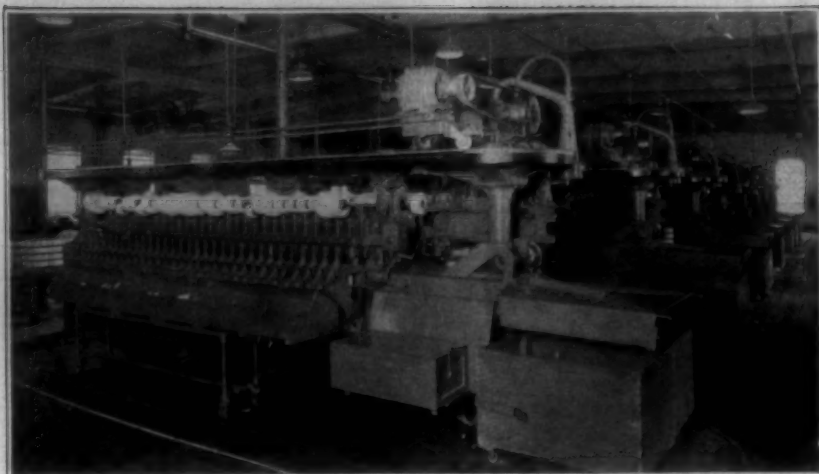
(2) Weighting materials: Calcium sulphate is employed for such goods as curtains. French chalk is used also, but less extensively.

(3) Softening agents: Mixtures of soap and oil or cocoa butter, petroleum jelly or soluble oil are the chief.

(4) Blueing agents: Smalt, fulmarine and coaltar dyestuffs are used occasionally to correct the color of a starch dressing, or, in the case of pure finishes, to improve the color of the goods.

(5) Antiseptics: These are used often with goods for export, particularly if they contain either starch

(Continued on Page 32)



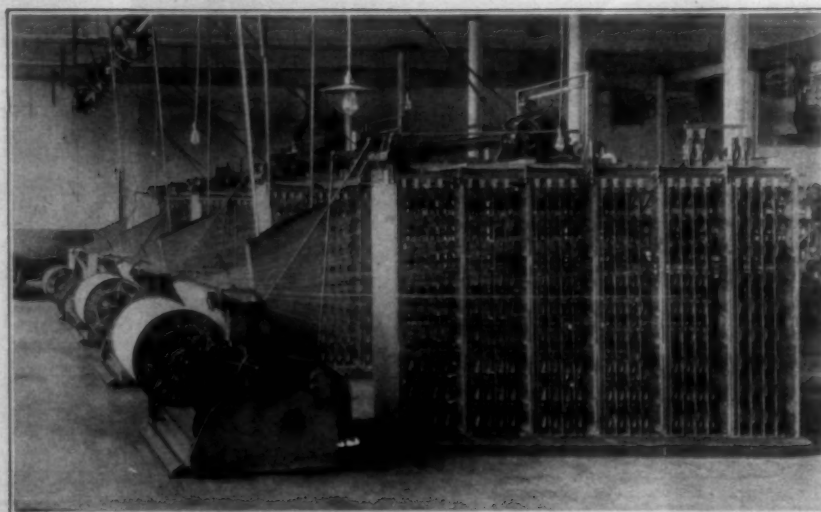
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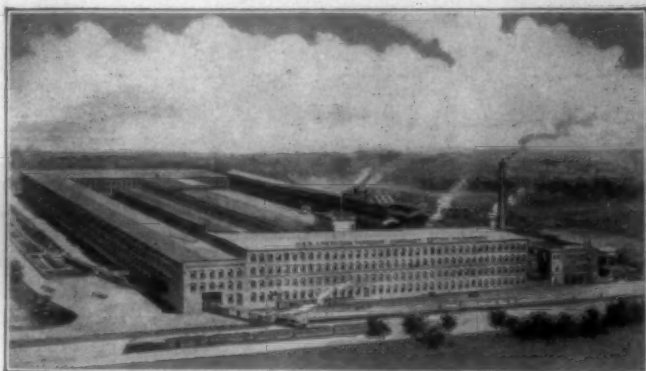
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Mill Situation in Fall River

By Rt. Rev. Mgr. James E. Cassidy, D. D., V. G., before the Men's Communion League in St. Patrick's Church, of Fall River, Mass.

WHEN, sometime ago, I addressed you on the subject of "The Fall River Mill Situation," my remarks, as the truth always does, provided a variety of comment and criticism.

To my astonishment I learned that I was speaking to a much larger audience than our Men's Communion League. From different parts of the country, in trade journal and labor paper, came echoes of and comments upon my utterances and, as was to be expected, some accepted and some rejected the truth.

But what most concerns you and me is not how these plain statements of truth were received by outsiders, but how they were received by insiders, by those whose plants and plans and purposes and performances were commented upon and criticised—in a word, by the Fall River manufacturers.

To their credit, I must say, a goodly portion of the local mill owners, that portion that is fighting Fall River's battle both for the present and the future, admitted the all-too-evident truths to which I was the first to be brave (or bold) enough to give public expression. Upon some particular portions of my address they could not set the stamp of their approval but as these remarks were but an attempt to express the intent and purposes of the local mill owners, past and present, they were naturally open to discussion and even denial. But in the main, by the local live and progressive manufacturers, my strictures were admitted to be all too true.

But there is another story to tell of the reception of my statements by those to whom they most critically applied and who are largely responsible for the crisis that now confronts this city. And it would be madness to pretend that a crisis does not confront us. We have societies known by a variety of animal names, such as the Elks, Eagles and Moose. In Fall River there is much material for the starting of a new organization known as the Ostrichers, hiding their heads under the sand, and making themselves believe there is no storm, while devastation is all about us in the form of staggering and fallen and dyeing and dead mill corporations. But I digress.

What reception, I repeat, was given to my remarks by those who have done the most to put this city in the plight in which it finds itself today?

What did the Chamber of Commerce, that capitalistic organization which is supposed to have as its sole reason of existence the building up of our city's commercial enterprises, that publishes a survey of the city's social workers and fails to even mention the most efficient of them all, the St. Vincent de Paul Society. What was the best that it could do?

The best that it could do was to invite to the city, a high official of the New Haven road, who did in-

form us in his graciousness that Fall River was not headed for the junk heap. Well, no one in the world ought to know more about junk heaps than the high officials of the New Haven road, the blue-ribbon junk heap of the country's railroads. And a high official of a railroad that is giving poorer service to the city of Fall River than it was giving 30 years ago ought to be the last man to be invited to cheer us on as we patiently struggle through the difficulties and disasters, begotten in the cotton business and due to the same dumbellism, dishonesty and misdirection that stripped the New Haven road and pulled down its stock valuation from \$250 to \$15 a share.

And with what reception did my remarks meet in the local dumbell circles? The best that they could do was to revive the old landlord system in Ireland. Most of you know what that was. Whenever, in Ireland, the landlords wanted to "get" the men who were telling the truth about them, particularly when they wanted to "get" the priest, they searched about for some back-slider, some cringing, fawning, disreputable character, and sent him out upon the track of the truth-teller. And unless I am greatly wrong in my guess, went barking and chasing this species of Fall River mill owners. And, turned down by reputable newspapers, they found a fence in another paper behind which they set up the creature of their capital and cheered him on to defile his own mother. The best that could be done by the very ones who are responsible for Fall River's fallen condition was to throw mud at the Catholic church. Proven failures at running cotton mills they presume to tell up how to run Catholic churches.

And that's the very spirit that has left us where we are. That's the very spirit that, when there was a strike in the hat-factory, tried to induce the priest to offer the strikers a higher wage than they were demanding, provided they would surrender their union cards as they passed through the office on their way to work the next morning. That's the very spirit that has been clamoring for a wage reduction in Fall River. That's the very spirit that only the other day, on the very threshold of winter, with hundreds of homes without food or fuel, cold-bloodedly and cruelty, locked its gates, disrupted its organization and discharged its entire working force, from overseer to sweeper. That's the very spirit that thinks, in this struggle of today, with the square-rigged whaler, it can keep pace with the latest Zeppelin.

And that's the very spirit that like the buccaners of old, running their rig upon the rocks, betook themselves and their plunder to their hill-top fastnesses and laughed to scorn the looted, the shipwrecked and the dead. And then they talk

(Continued on Page 20)



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Carding and Spinning

By George M. Ivey

Copy Revised for Third Edition.

(Continued from last week)

Production Table of Whittin Model D-2 Comber

For grades of cotton 1 3-16 inch or longer staple.

Showing the number of pounds of Combed Sliver produced in one day of ten hours, allowing 5% off for cleaning, oiling, etc.

Coiler connection gear 50 teeth.

Nips

Grains per yard of Combed Sliver.

Per Min.	46	48	50	52	54	56	58	60	62	64	66
Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.	Lbs.
100	78.45	81.86	85.27	88.68	92.09	95.50	98.91	102.32	105.73	109.15	112.56
105	82.37	85.95	89.54	93.12	96.70	100.28	103.86	107.44	111.02	114.60	118.19
110	86.30	90.05	93.80	97.55	101.30	105.05	108.80	112.56	116.31	120.06	123.81
115	90.22	94.14	98.06	101.98	105.90	109.83	113.75	117.67	121.59	125.52	129.44
120	94.14	98.23	102.33	106.41	110.51	114.60	118.70	122.79	126.88	130.98	135.07
125	98.06	102.33	106.59	110.85	115.12	119.38	123.64	127.91	132.17	136.44	140.70
130	101.99	106.42	110.85	115.29	119.72	124.16	128.59	133.02	137.46	141.89	146.33

GENERAL INFORMATION

A 6-head comber occupies a space of 13 ft.x3 ft.-5-in., and weighs about 3,000 pounds. The first ones offered to the public cost \$1,000.00, with an additional \$1,500.00 for royalty. American builders make machines for laps 8% to 12 inches wide, but English builders have them 7%, 8% and 10% inches. All Heilmann combers are built almost exactly alike, regardless of the maker.

Combed yarns are much stronger and smoother than carded yarns. The difference depends a good deal on the price of cotton. As a large per cent of the value of combed yarn is in the waste which is taken from the material, high-priced cotton means high-priced waste.

CHAPTER IV

THE NUMBERING OF COTTON YARN

Until the cotton passes the drawing frame, the system of numbering or weighing involves only the weight per yard which on the lapper is expressed in ounces, and afterwards in grains. After the cotton leaves the drawing frame, at each subsequent process it is drawn finer and finer and the weight of one yard is too delicate a matter to be accurately determined. It is customary to take the weight of 12 yards up to the spinning frame or mule, and afterwards 120 yards, or a multiple of it. The whole system is based on the fact that if 840 yards weigh one pound, the yarn or roving is called No. 1. If it takes twice 840 yards, or three times, or ten times, to make a pound, the number is 2, 3 or 10. If the stock is roving, it is called 2, 3 or 10 hank. If it is thread it is called number 2, 3 or 10. In England, it is referred to as counts. There is no difference whatever in the system of measuring roving and yarn. The term hank has two meanings which must not be confused. It may refer as above to the number of roving, or it may mean a definite length of stock, which is 840 yards. Of course there is a similarity in the two meanings, as number 10 hank roving contains 10 hanks (10x840), but number 1 hank roving and one hank of roving or yarn may be the same and may be entirely different.

The table of weight is composed entirely of the avoirdupois table and partly of Troy, and is as follows:

437½ grains (Troy)=1 oz. (avoirdupois).
16 ozs.=1 lb. (avoirdupois).
7,000 grains (Troy)=1 lb. (avoirdupois).

As said above, it is customary in weighing roving to take 12 yards, which is 1-70th of a hank, and for weight to take as a basis 100 grains, which is 1-70th of a pound (7,000 grains). Twelve yards of yarn is too small a quantity, so we take 120 yards (1-7th of a hank) and 1,000 grains (1-7th of a pound). If, then, we have the weight of 12 yards of roving and wish to find the number, we have only to divide it into 100; or, if we have the weight of 120 yards of yarn and wish to find the number, we have only to divide it into 1,000. Thus, if 12 yards of roving weigh 16 grains, $100 \div 16 = 6.25$, which is the hank roving. If it were yarn instead of roving, of course 6.25 would be the number of yarn, but we would take 120 yards and divide it into 1,000, which is the same so far as results are concerned.

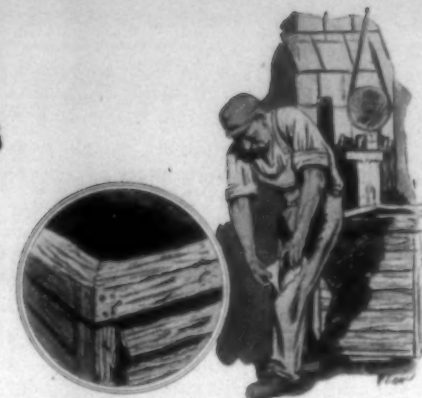
As the overseer has frequent occasions to know the number of roving or yarn without the troubles of this division, we give below a table which applies to roving and yarn alike.

Table for Numbering Roving or Yarn

Number of Roving or Yarn	Weight of 12 Yards Roving	Weight of 120 Yards Yarn	Number of Roving or Yarn	Weight of 12 Yards Roving	Weight of 120 Yards Yarn	Number of Roving or Yarn	Weight of 12 Yards Roving	Weight of 120 Yards Yarn
.20	500	—	2.25	44.4	—	5.50	18.2	182
.25	400	—	2.30	43.4	—	5.75	17.4	174
.30	333	—	2.35	42.6	—	6.00	16.7	167
.35	285	—	2.40	41.6	—	6.25	16.0	160
.40	250	—	2.45	40.8	—	6.50	15.4	154
.45	222.2	—	2.50	40.0	—	6.75	14.8	148
.50	200	—	2.55	39.2	—	7.00	14.3	143
.55	181.8	—	2.60	38.5	—	7.25	13.8	138
.60	166.6	—	2.65	37.8	—	7.50	13.3	133
.65	154	—	2.70	37.1	—	7.75	12.9	129
.70	142.8	—	2.75	36.4	—	8.00	12.5	125
.75	133.3	—	2.80	35.7	—	8.25	12.1	121
.80	125	—	2.85	35.1	—	8.50	11.7	117
.85	117.6	—	2.90	34.5	—	8.75	11.4	114
.90	111.1	—	2.95	33.9	—	9.00	11.1	111
.95	105.2	—	3.00	33.3	—	9.25	10.8	108
1.00	100	—	3.05	32.8	—	9.50	10.5	105
1.05	95.2	—	3.10	32.3	—	9.75	10.3	103
1.10	91	—	3.15	31.7	—	10.00	10.0	100
1.15	87	—	3.20	31.2	—	10.25	9.8	98
1.20	83.5	—	3.25	30.8	—	10.50	9.5	95
1.25	80	—	3.30	30.3	—	10.75	9.3	93
1.30	76.9	—	3.35	29.8	—	11.00	9.1	91
1.35	74	—	3.40	29.4	—	11.25	8.9	89
1.40	71.5	—	3.45	29.0	—	11.50	8.7	87
1.45	69	—	3.50	28.6	—	11.75	8.5	85
1.50	66.5	—	3.55	28.2	—	12.00	8.3	83
1.55	64.5	—	3.60	27.8	—	12.25	8.2	82
1.60	62.5	—	3.65	27.4	—	12.50	8.0	80
1.65	60.5	—	3.70	27.0	—	12.75	7.9	79
1.70	58.8	—	3.75	26.7	—	13.00	7.7	77
1.75	57.1	—	3.80	26.3	—	13.25	7.5	75
1.80	56.5	—	3.85	26.0	—	13.50	7.4	74
1.85	54.0	—	3.90	25.6	—	13.75	7.2	72
1.90	52.5	—	3.95	25.3	—	14.00	7.1	71
1.95	51.2	—	4.00	25.0	250	14.25	7.0	70
2.00	50.0	—	4.25	23.5	235	14.50	6.9	69
2.05	48.8	—	4.50	22.2	222	14.75	6.8	68
2.10	47.6	—	4.75	21.1	211	15.00	6.7	67
2.15	46.6	—	5.00	20.0	200	15.25	6.5	65
2.20	45.4	—	5.25	19.1	191	15.50	6.4	64
15.75	6.3	63	26.00	—	38.4	36.25	—	27.6
16.00	6.2	62	26.25	—	38.1	36.50	—	27.4
16.25	6.2	62	26.50	—	37.7	36.75	—	27.2
16.50	6.1	61	26.75	—	37.4	37.00	—	27
16.75	6.0	60	27.00	—	37	37.25	—	26.8
17.00	5.9	59	27.25	—	36.7	37.50	—	26.6
17.25	5.8	58	27.50	—	36.3	37.75	—	26.5
17.50	5.7	57	27.75	—	36	38.00	—	26.3
17.75	5.6	56	28.00	—	35.7	38.25	—	26.1
18.00	5.5	55	28.25	—	35.4	38.50	—	26
18.25	—	54.8	28.50	—	35.1	38.75	—	25.8
18.50	—	54	28.75	—	34.8	39.00	—	25.6
18.75	—	53.4	29.00	—	34.5	39.25	—	25.5
19.00	—	52.6	29.25	—	34.2	39.50	—	25.2
19.25	—	51.9	29.50	—	33.9	39.75	—	25.1
19.50	—	51.3	29.75	—	33.6	40.00	—	25
19.75	—	50.6	30.00	—	33.3	40.25	—	24.8
20.00	—	50	30.25	—	33.1	40.50	—	24.7
20.25	—	49.4	30.50	—	32.8	40.75	—	24.5
20.50	—	48.8	30.75	—	32.5	41.00	—	24.3
20.75	—	48.2	31.00	—	32.2	41.25	—	24.2
21.00	—	47.6	31.25	—	32	41.50	—	24.1
21.25	—	47.1	31.50	—	31.9	41.75	—	24
21.50	—	46.5	31.75	—	31.5	42.00	—	23.8
21.75	—	46	32.00	—	31.2	42.25	—	23.7
22.00	—	45.4	32.25	—	31	42.50	—	23.5
22.25	—	45	32.50	—	30.7	42.75	—	23.4
22.50	—	44.4	32.75	—	30.5	43.00	—	23.2
22.75	—	44	33.00	—	30.3	43.25	—	23.1
23.00	—	43.4	33.25	—	30.1	43.50	—	23
23.25	—	43	33.50	—	29.8	43.75	—	22.9
23.50	—	42.5	33.75	—	29.6	44.00	—	22.7
23.75	—	42.1	34.00	—	29.4	44.25	—	22.6
24.00	—	41.6	34.25	—	29.2	44.50	—	22.4
24.25	—	41.3	34.50	—	29	44.75	—	22.3
24.50	—	40.8	34.75	—	28.8	45.00	—	22.2
24.75	—	40.4	35.00	—	28.5	45.25	—	22.1
25.00	—	40	35.25	—	28.4	45.50	—	22
25.25	—	39.6	35.50	—	28.2	45.75	—	21.9
25.50	—	39.2	35.75	—	28	46.00	—	21.7
25.75	—	38.8	36.00	—	27.7	46.25	—	21.6
46.50	—	21.5	52.00	—	19.2	61.00	—	16.4

(Continued on Page 28)

Makeshift receptacles do not pay



WHEN you run your hand around the inside surface of your mill receptacles do you discover cracks, splinters, sharp jagged edges?

Trucks, mill-boxes, cans and other receptacles should be made of a strong smooth material. They should remain smooth after years of hard use.

Diamond Fibre Receptacles have an agate-smooth inside surface. They are carefully and skillfully built. There are no rough spots or projections to injure the most delicate materials. They protect hands and clothes of workers.

Diamond Fibre is a tough, resilient material. Though light, it has the wearing qualities of steel. It does not scuff, scar, crack or break. It is impervious to grease, oil, water. Dust and dirt do not adhere to the smooth surface.

Receptacles for every purpose

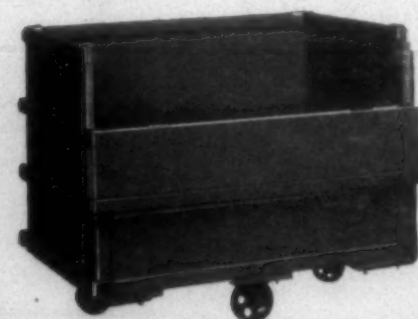
We manufacture trucks, roving cans, gill cans, mill baskets, barrels, and boxes in standard sizes. Where special types or sizes are required, we build to specification.



Diamond Fibre Gill Can

Diamond Fibre spool heads, loom picks, swift braces, spindle guards, thrust washers, shuttles, flier disks, shuttle box liners, and lacing combs are strong, smooth, durable. They outlast special parts made of substitute materials.

Write for our new booklet, "Diamond Fibre Receptacles." It contains descriptions and specifications of our smooth receptacles and specialties.



Diamond Fibre Truck with drop side

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Studying the Job

IF the series of question marks contained in this paper succeed in arousing some of the members of this Association to the point of doing some constructive thinking, then the wisdom of assigning the above subject to me may to some degree have been justified.

A real awakening in this locality was effected in September as a result of the "New England Week" drive which not only stimulated sales for that week but will, if consistently followed up, have a lasting beneficial result. A similar awakening which would ultimately make it possible to continue to manufacture cotton goods in New England on a competitive basis with other parts of the country should take place in the operation of the mills.

Do you gentlemen actually know as much about what is going on inside your mills as you do about what is coming into your mills?

You now weigh and carefully sample every bale of cotton which you receive.

You carefully check all the invoices making claims for short weight and for variations from standard grade and staple.

You count and inspect the supplies purchased and check the bill before paying it.

Excepting cotton invoices—labor,

J. M. Barnes, Harpham, Barnes, Stevenson & Co., Inc., Boston, before National Association of Cotton Manufacturers.

as reflected by your pay rolls, represents the largest invoices that come into your office.

In how many mills is the same careful attention given to checking up labor results? Have you recently taken an inventory of your labor situation? Are you getting the returns which you might reasonably expect from the invoices rendered to you by your operatives? There was a time during and shortly following the war when for the majority of mills there existed a comfortable margin between the cost and the selling price of cotton goods. At that time a few hands more or less on the payrolls bothered the average mill man very slightly but the passage of six years has largely blotted out the wide profit margins, and has made the "few hands more or less" of vital importance to the successful operation of New England mills.

I am now going to make a statement to which some of you may take exceptions. A great many mill managers in this section are not getting the best possible results from their operatives due to the lack of complete and detailed

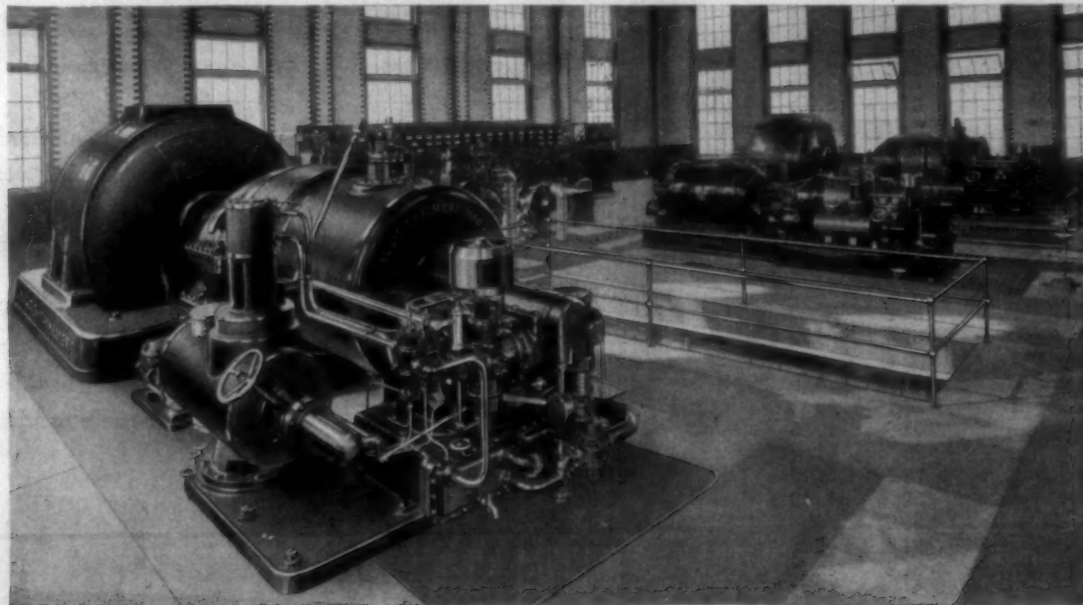
knowledge of the conditions which exist in their own plants. Let us now go into a short discussion in an attempt to prove this statement.

Final labor costs of any product depend on the amount of work turned out as well as the rate of wages paid. It is possible that in the past, too much attention has been paid to the rate feature and not enough attention given to the quantity of service rendered. Did you ever analyze the work of different operatives? Some day, after you have watched either a spooler or a quiller tender doing a real day's work compare those duties with some other jobs around the mill, and you will find you are paying many hands skilled wages for working two-thirds of the time; and very often doing skilled work about half the time they are working. The other third of the time they are absolutely idle, perhaps not even watching their work run. Jobs have been laid out on the basis of ability possessed by the average operative. If we can arrange to divide the work being performed under two headings—skilled and unskilled, and devise methods for employing the idle time referred to—we have a

common sense basis upon which to start the work of reducing costs.

No doubt a majority of us will agree that card grinding requires the services of a skilled workman. How many cards do your grinders look after and what proportion of their time is occupied in doing skilled work? Are not some of the duties assigned to them irksome to real mechanics?

Most of us will also agree that, as far back as we can remember, a pair of frames has been the usual assignment to all speeder tenders regardless of their skill or ability. If they are particularly good the mill gets a high percentage of production of excellent quality. If they are average operatives commensurate lower results are obtained. The work turned out by the group which rates below the general average not only increases the cost of roving but is the cause of trouble and loss of production in the spinning and weave rooms. The question here is what proportion of the speeder tender's time is occupied in doing skilled work, and what proportion is used in doing unskilled work which could be done more profitably by untrained help? In other words, does the average mill capitalize all the skill which it possesses in its personnel, thereby



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making the job more attractive to the skilled operative, or does it mix enough unattractive duties with all the jobs so that it is difficult to secure and hold workers who possess real ability? If the job is properly studied and appropriate changes made in the method of operating a room, there is a chance for real advancement in the department itself. In this way not only will the skilled operatives be better satisfied but also learners coming into the mill can look forward to an attractive job as regards duties, as well as pay, when they are far enough advanced to deserve promotion.

Let us pass along to the spinning room and ask ourselves some more questions. A spinner performs about three operations which really require skill. How many ends do your spinners piece up per thousand spindles per hour? How many bobbins of roving do they creel per day? How often do they clean their thread boards and roller beams? The answers to these three questions depend upon the size of yarn, kind of stock being used, size of roving bobbin, and the condition of the machinery and equipment. An analysis of your own conditions will demonstrate what percentage of her time is utilized in performing the work upon which her pay should really be based. Why do New England manufacturers continue to pay skilled wages for unskilled work?

It has been my experience to go through spinning rooms which apparently were running very well, yet after making a careful detailed study of the job, I have been surprised to learn that the operatives were really doing an unnecessary amount of work on account of the continual breaking down of an abnormal number of ends. Naturally the overseer takes pride in having his room impress you as being well run. He insists that the ends be kept up, at the same time, however, failing to make a determined effort to find out why the work does not run better.

An analysis, such as mentioned above, in your spinning room may disclose mechanical conditions and poor preparation of roving which can readily be improved.

A careful observation of the spinners in a room will disclose the facts that some carelessly creel in roving with long laps or "pig-tails," and piece up ends in such a way as to cause bunches and uneven places in the yarn which either breaks in the loom, or is responsible for the bad appearance of the finished cloth.

This naturally holds true wherever piecings are made. If the very best and most skillful operatives are picked to perform this important function, relieving them of all other duties, it can readily be seen that not only will quality be improved but the cost of production will be materially lowered.

Where standard numbers of yarn are being spun, with comparatively little changing, an analysis of conditions often discloses the fact that third hands or section men are not sufficiently well fitted into the gen-

eral production scheme. Their value to the mill can be considerably enhanced.

Do you know by actual test what percentage of time your doffers spend on the real job for which they are paid? A few mills are receiving the benefits to be derived from paying their doffers on the basis of hanks turned off by the frames. "A word to the wise is sufficient."

If you are making standard styles of cloth in your mill it is possible to so standardize your conditions that a slasher tender is able to run two slashers. The work will not only be produced at a lower cost but the quality will be very much better.

There is no longer much basis for serious argument regarding the merits of plain versus automatic looms for most kinds of work. If you still have some plain looms it would pay in most instances to stop them and operate the automatics on two shifts.

For the purpose of this discussion we will confine ourselves to the automatic looms. In the operation of this type of loom, the weaver has very little control over the quality of cloth turned off. The determining factors are quality of yarn, care in preparation, and fixing of the looms.

As weavers usually receive the highest pay among the actual machine operators in a mill they become a very important factor when the subject of cost is considered, and we quite naturally ask ourselves what the real duties of a weaver should be?

In any gathering of mill men where practical problems are being discussed the most frequent question asked is, "How many looms do your weavers run on this or that fabric?" When the answer is given I often wonder whether the number has been determined by any real study of the factors which really govern the number of looms which a weaver can run efficiently.

The average weaver seldom knows what really causes his looms to stop. In the minds of many agents, superintendents, overseers, and even the weaver on a set of looms, the principal causes of loom stoppage are considered of minor importance because the weaver can readily start up the loom after each individual stop. The aggregate of all such stops in the day's run account for a large part of the production losses.

Experience has taught me that only those duties requiring real skill should be assigned to a weaver. The principal work of a weaver ought to be that of starting up looms properly after stops, the inspection of warps for imperfections and of the cloth for defects in quality which can be remedied at the loom. All other duties formerly considered as coming under the head of weaving should be assigned to less skilled operatives.

If this is done after careful study of your conditions I venture to say that your weavers will operate a great many more looms at the same or increased efficiency at a lower

(Continued on Page 27)

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Mill Situation in Fall River

(Continued from Page 14)

Ages, the Dark Ages, when the Catholic church was ruling: The dark ages that knew more about art and architecture and literature and the better things of life, that knew more about human help, and human sympathy and human righteousness, that knew more about trade and trafficking and merchandising, more, yea a thousand times more than these defaming owners and agents of defunct cotton mills. So much for my critics—now for conditions.

It is entirely unnecessary for me to repeat here the comment I previously made on Fall River mill conditions. Suffice to say, I seem to have started something, judging by the number of those who since, in attack and defense, have talked about our local industrial situation. We have run the gauntlet and risk of being called calamity criers and prophets of evil.

Well, at the worst, better be a calamity crier than a calamity causer; better be a prophet of evil rather than a doer of evil. And surely we of the Catholic church ought to be the last to be charged with losing confidence in the future of Fall River, or of wanting to say or do anything that might work harm to the city or the city's chief, yea, only industry. By their fruits you shall know them. And it may surprise some to know that in the last ten years the Catholic church in this city has put more money in

new schools than has the city of Fall River. That does not look like lack of confidence, does it? And in the last ten years the Catholic church has put more money in churches than all the other churches combined.

That does not look like lack of confidence, does it? But I do not pretend to speak, in these matters, for the Catholic church. I speak only my own mind, and my own mind is this: Fall River, today, is suffering such a depression as it has not suffered in 25 years. This depression, I maintain, is brought about by the combination of two causes, one temporary and we hope of short duration, the other permanent and, it seems to me, of constantly increasing forces.

The temporary cause of our local distresses is the general depression in the cotton goods trade and is not confined to Fall River. In a recent address a local mill agent maintained that this depression was not peculiar to the cotton business, but also prevailed in many others. But the President of the United States evidently differs from the agent of the Sagamore Mills since, in his widely radiated address last Thursday night the President appealed for election with the slogan: "Vote the Republican ticket and maintain the present prosperity." Well, if the present times be prosperous for Fall River, then God meekly save us from prosperity. But we must not be drawn into the talk of politicians—we must tell the truth.

And against all objections, whether from mill owner or from labor leader—and particularly from the latter, we maintain that Southern competition has a great deal to do with our present depression and it will have more to do each year unless the North wakes up. We must see things as they are and not as we would like to have them, and both mill owner and mill worker must unite, each doing his just part and portion if the cotton industry is to be saved for New England.

Some, particularly the labor union leaders, would have us believe that Southern competition is a pure invention of the Northern mill men. Unhappily for us it is a grim reality and the proofs of its existence are incontestable. Sometime since I was visiting friends in Newburyport and was informed that a cotton mill there, which had been closed by its owners transferring its business to the South, was going to be sold at auction.

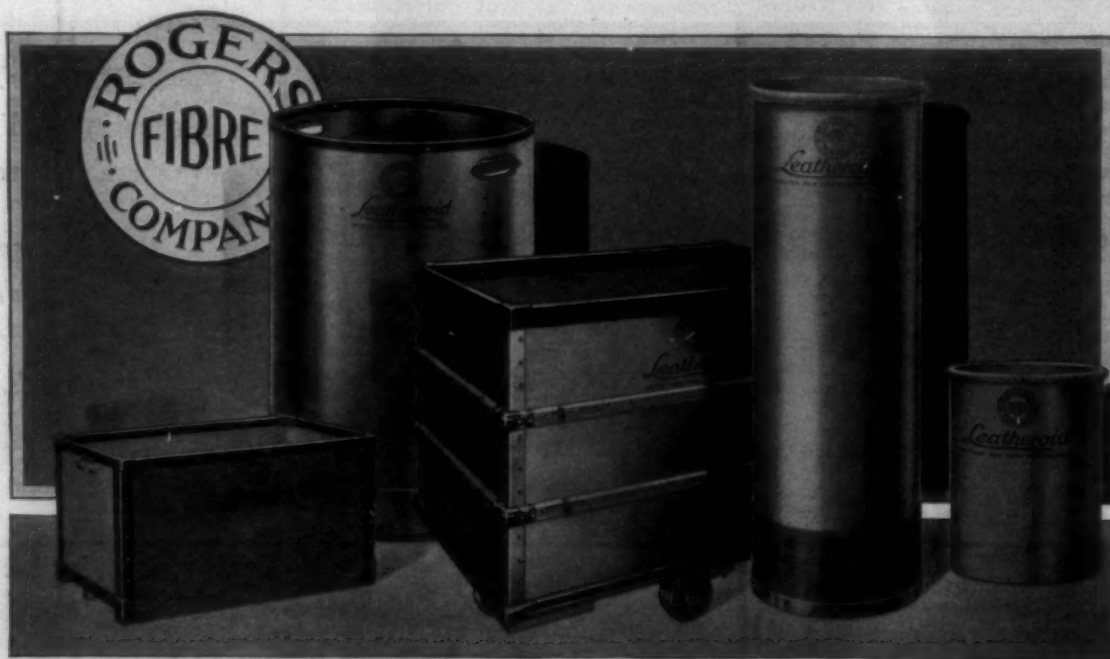
Last week I inquired what price was obtained for it and was informed that at the auction not a single bona-fide bid was made for the plant. Now, I don't know a great deal about mills, but I do know something about auctions and auction values, and I do not hesitate to say there are more than half a dozen mills in Fall River upon which, if they were put up at auction, not a single bid could be obtained. Does not that look as though there was something the matter with the cotton business in the

North? The Newburyport mill has gone South. Pawtucket mills have gone South. The American Printing Company is moving its making plant South. Yes, and there are many other Fall River mills that would like to go South but they haven't got money enough to pay for the moving—never mind the building of new mills.

No intelligent person will deny that the battle for the cotton business is on between the North and the South and that it is only just beginning. The North, under its handicaps, but with its many superior advantages, will hold on until the South, by natural causes, will lose many of the advantages it now possesses, and will be obliged to manufacture yarn and cloth under the same labor and other conditions that now prevail here. But the North will hold on, as I have said, only by intelligent, sympathetic, sincere and efficient co-operation between the mill owner and the mill operative.

The mill operative must give the best that is in him. He or she must be honest—not only with his employer's goods, but with his machinery and his time. He must work for his employer, not loaf on the job. He must save for his employer, not waste. He must be careful, not careless. He must be a help and not a hurt to the efficiency of the mill. Unless he wishes to move South with the mill he must realize that the battle to remain North is as much his as it's the mill owner's. He should be a loyal and not a dis-

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loyal employe, he should remember that the interests of the mill are or ought to be his interests.

But there are obligations binding alike on the mill owner, on the mill executive. Human labor, the souls and spirits and life energies of human beings, their bodies and bones and substances are not commodities to be bought or sold at the buyer's wish and will. Neither the North nor the South will ever prosper on the principle that men and machinery are alike, that when you have no further use for them, men, women and children, you can, with looms and spinning frames, consign them to the discard or the junk heap. And there are too many mill executives in Fall River, who have not yet realized that truth.

If operatives are to be honest, conscientious, considerate, careful, industrious, interested, loyal, then mill owners and mill executives must meet them with the same qualities and characteristics.

The agent of the Sagamore mills has recently told the public, through a local club, that he has little or no fear of Southern competition and that there is nothing permanent the matter with Fall River mills. I would deeply regret that any words of mine might be interpreted as criticism of this good citizen.

No man realizes better than do I that the future of Fall River, a bright and prosperous and progressing future, rests in the hands of such as he and his equally competent working partner. And if his corporation fears not Southern competition, and he has not said that he has not suffered from it, that it has not forced him to find new markets for his products, if, despite widespread depression and Southern competition, all of his plants are operating and have been operating, some portions both day and night, it is because mill management, and mill merchandising there are conducted on principles and with abilities as far apart from those engaged in the conduct of the recently locked and closed mills as day is from night, as right is from wrong.

It is not for me to give a coat of whitewash to any mill corporation, and opinion would not be worth while if it were not frank and honest.

I give due consideration to the fact that the treasurer of the Sagamore Mills is a charitable pleader for his weaker and less worthy mill brethren, but I say it with all due deference, his charity and his consideration carries him too far when he allows himself to be the spokesman for longer hours for labor. What justification, with its enormous earnings, has the Sagamore Mills for pleading for longer hours for labor? Just the same justification as it might have for pleading for a reduction in wages—and that is absolutely none.

And now we come to the question of wages. No doubt you know there has been much recent talk of a reduction in wages. Notwithstanding the fact that the government reports an increase in the cost of living, notwithstanding the fact that bread and meat and clothes and food and fuel and rent cannot be

purchased cheaper, many Fall River mill men are desirous, are ready to cut wages. What justification, I ask, has the Charlton Mills for cutting wages? What the King Philip Mills, what the Stevens, the Osborn, the Pilgrim, the Sagamore? But let us take a more conspicuous example. What justification has the American Printing Company for cutting wages? The American Printing Company has no Southern competition. It, with one possible exception, is without a competitor on the whole continent. It sells its own goods, it fixes its own prices.

Some years ago while traveling in South America I ran across an English drummer selling print cloths for an English house. I watched him getting his numerous trunks and sample cases aboard the steamer and when I commented upon his many worries he remarked: "This is nothing. You ought to see me and my baggage crossing the Andes on muleback." And when I asked him how it was that he could come over here from England and sell these goods right at our threshold he smilingly remarked, not knowing whence I came: "Why there is only one firm in the United States that we're afraid of and that's the American Printing Company of Fall River." Perhaps the American Printing Company might be tempted to use this proof of foreign competition as a justification for lower wages, but I am pleased at the report, coming from reliable sources, that the American Printing Company has no desire to disrupt its working force by inviting a strike through reduction of wages.

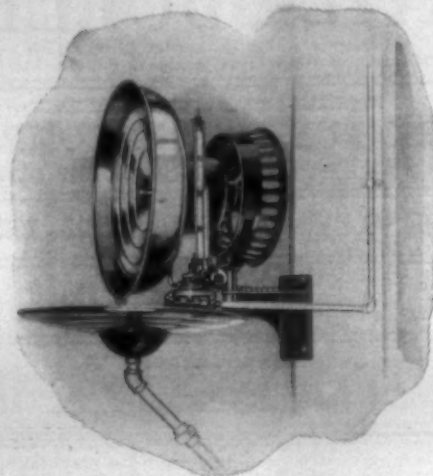
In the mills that I have mentioned and in many others there is no justification or excuse for a reduction in wages—there is no explanation except in a desire to maintain unity of action in the local Cotton Manufacturers' Association. And all I care to say about that feature of the situation is that if that's all the Manufacturers' Association is good for, pulling down the top mills to the level of the bottom, hanging dead sisters around live mill-men's necks and forcing wages below a living wage scale and adding longer hours to labor, then the quicker the Manufacturers' Association is given the first class funeral, the brighter will be the prospects for Fall River mill situation. I think it has been sufficiently discussed.

It is the duty of the operative, for mere reasons of self-preservation, to prove themselves good cloth and yarn makers.

It is the duty of the mill executives to prove themselves good cloth and yarn merchandisers. The South's awake! The days of mulling along on Bedford street and waiting for customers to come, are gone forever.

The only business man who prospers by waiting for customers to come—is the undertaker—and even he gets, at times solicited for the health of the sick. We want mill conductors and not undertakers. We want mill runners and not mill stoppers. We want mill savers and not mill killers. We want mill executives whose heads and whose hearts are susceptible of im-

(Continued on Page 35)



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THURSDAY, NOVEMBER 13, 1924

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The Massachusetts Result

THE telegram which we had received prior to our last edition led us to state that Massachusetts had rejected the Federal Child Labor Amendment by 150,000, but the real majority against the amendment was 448,000, there being 246,000 votes for and 696,000 against the amendment. This confirmed our prediction made four weeks ago that the amendment would be rejected by a 2 to 1 vote and that it might reach 3 to 1.

The overwhelming rejection of the amendment by a State that had been counted upon to be the leader in ratification has stunned the advocates of the centralization scheme.

It has been the habit of the advocates of the measure to write what they consider shrewd editorials advocating the amendment and send them to friendly newspapers, and one of their editorials which was published about two months ago in several hundred newspapers closed with these words:

"Also the States with the most forward-looking attitude toward this question have no objection to the amendment."

It was a suggestive effort to secure support but the vote of the Massachusetts people has rudely upset such statements.

When the Amendment Resolution was before Congress we tried to get an amendment requiring that it be submitted to the voters of each State but Miss Grace Abbott and Owen Lovejoy were afraid of the popular vote and preferred to depend upon the pressure that their organization could put upon Legislatures and we still have that danger to face.

The vote of the people of Massachusetts will have a considerable effect upon the legislators in other States because they will realize that the surprising vote in that State indicates public sentiment.

There has been universal surprise expressed relative to the overwhelming rejection by Massachusetts, but we wrote a friend at North Adams, Mass., about two months ago in reply to a pessimistic letter, that our only task was to get the people of his State acquainted with the facts and that we were confident that when the truth was known Massachusetts would reject.

The person who is really responsible for the overwhelming rejection by Massachusetts is Miss Grace Abbott, Chief of the Children's Bureau of the Department of Labor.

Miss Abbott, in searching among the Census Bureau figures, found the phrase, "In gainful occupation," and believing that she could use it to advantage, coined the expression, "More than a million little children 10 to 15 in gainful occupations." She rightly thought that it would carry the impression that more than a million little children were working in factories and that many of them were only 10 years of age. It was intended to deceive.

It required time and much hard work to strip that statement of its implied meanings and to show the people of Massachusetts that less than 24 children under 14 years of age were legally employed in all the cotton mills of the South, but when they realized the intended deceit, they considered it an insult to their intelligence, and in spite of the fact that the State was literally flooded with professional uplifters in their desperate effort to regain the lost ground, there was an overwhelming vote of repudiation.

Miss Abbott's phrase, and the fact that having a weak Congress, their greed influenced them to fix the limit at 18 years, is responsible for the defeat in Massachusetts and the opposition that has developed in other States.

Realizing as we do that the "uplifters," most of whom expect to get fat jobs from the million dollar an-

nual expenditure that would be required by a Federal Child Labor Law, will wage a desperate fight in the other States, we caution against over confidence and we will continue our efforts to make the truth known to the people of this country.

We played a big part in obtaining the results in Massachusetts and we will never rest until we have decisively defeated this effort to take from the States the right to regulate their own affairs.

As Louisiana, Georgia and North Carolina rejected the amendment they in turn became the subject of columns of inspired abuse and misrepresentations. Massachusetts will not be spared and we are awaiting with much interest the opening of the vultures' mouths.

An Appreciated Gift

A VERY much appreciated present that we received last week was a pair of sheets and a pair of pillow cases from the Alexander Manufacturing Company, Forest City, N. C.

The Alexander Manufacturing Company began about two years ago to manufacture wide sheetings and pillow tubing and planned from the beginning to produce an article that by reason of its quality would command the respect of the trade.

The beautiful quality of the "Alexander" sheetings and pillow cases that they sent us shows that they have succeeded to a remarkable extent.

They are setting an example to other Southern mills by producing high quality goods and establishing a trade mark.

The Wisconsin Straw Vote

THE Wisconsin Agriculturalist has been taking a straw vote in Wisconsin, Senator LaFollette's State, on the Child Labor Amendment with the following results to November 10th:

For amendment 59
Against amendment 817

On account of the continued misrepresentation of the North Carolina law which permitted a boy 12 to 14 years of age to work during summer vacation, the last Legislature cut out all such permits.

The law of Senator LaFollette's State permits both boys and girls to work in factories during vacation and has therefore lower limits than any of the Southern States.

The Joke Is On LaFollette

SENATOR LaFOLLETTE, Senator Wheeler and others have gone about the country advocating the curbing of the powers of the United States Supreme Court because said court held that Congress did not have the power to regulate child labor in the several States.

While LaFollette and his friends were raving about the Supreme Court refusing to allow the people to enact laws, Massachusetts by a vote of 448,000 rejected the Child Labor Amendment, and it turns out that the people did not want the very thing of which Senator LaFol-

lette said they were being wrongfully deprived.

An old negro standing at the door of a suspended bank in which he had a few dollars said he had heard of banks failing but that this was the first time he ever had one "bust right in his face."

The child labor situation has "bust" right in Senator LaFollette's face.

Why Not Compete?

A recent commercial report says:

"An intensive selling campaign by Japanese manufacturers of cotton grey cloths has resulted in taking much business from American manufacturers in the Near East, in Egypt and in South America.

Japan uses more Indian short staple than American cotton. As a result of the methods now being employed to penetrate new markets, the Japanese are making rapid headway against American and British competition."

This is nothing new but we wonder why some of our Southern mills do not compete for this foreign business by the same methods.

We know that the spinning of Indian cotton is not a pleasant business when mixed with American cotton but with experience in handling it the work runs better than at first.

Those mills that will go seriously after the proposition of meeting Japanese competition in low cost export goods through the use of Indian cotton will, we believe, have profitable business during periods that others are idle.

The efficiency of American labor greatly discounts the low wages paid the inefficient Japanese.

Once Bobbin Boy, Taxed \$84,201.02

Augusta, Me.—About 30 years ago a boy who had nothing to aid him but his willingness to work and his eagerness to succeed, got a job as bobbin boy in the Mohair Plush Mills, operated by the Goodall family at Sanford. Recently he was revealed by the lists in the office of Internal Revenue Collector Frank J. Ham to be paying a bigger income tax than all the members of the enormously wealthy Goodall family put together.

He is William Batchelder, assistant treasurer and general manager of the Sanford Mills. His income tax assessment for last year was \$84,201.02, believed to be the second largest paid by any Maine citizen last year.

Mr. Batchelder is a man about 60 years old and rated by his associates as one of the shrewdest in the great manufacturing organization built up by the powerful Goodall family. He has many large financial interests outside of the textile industry he manages, but they have not brought him publicity, even among the inner circle of Maine bankers.

Personal News

D. D. Rice has become paymaster at the Brogan Mills, Anderson, S. C.

W. F. Cason has been elected secretary of the Brogan Mill, Anderson, S. C.

G. T. McGregor has resigned as secretary of the Brogan Mills, Anderson, S. C.

S. H. Lander has been appointed assistant treasurer of the Brogan Mills, Anderson, S. C.

C. H. Johnson has resigned as overseer spinning at the Vance Cotton Mills, Salisbury, N. C.

W. S. Moore has resigned as superintendent of the Mills Mills No. 2, Woodruff, S. C.

L. A. Starnes, formerly of the Cannon Mills, Concord, N. C., is now overseer spinning at the Vance Cotton Mills, Salisbury, N. C.

A. O. Norris, superintendent of the Barringer Manufacturing Company, Rockwell, N. C., has been elected president of the Bank of Rockwell.

E. R. Caldwell has resigned as second hand in the slasher room at the Aragon Mills, Rock Hill, S. C., to accept a similar position at the Industrial Mills, of the same place.

J. O. Epps, of Cramerton, N. C., is now night overseer of carding and spinning at the Johnston Manufacturing Company, North Charlotte, N. C.

James T. Barker, Jr., of the Brighton Mills, Passaic, N. J., has accepted a position as superintendent of the Green River Manufacturing Company, Tuxedo, N. C.

H. E. Erwin has resigned as superintendent of the Green River Manufacturing Company, Tuxedo, N. C., to become superintendent of the W. S. Gray Mills No. 2, Woodruff, S. C.

Gen. Lawrence D. Tyson, of Knoxville, Tenn., former cotton manufacturer and president of the American Cotton Manufacturers' Association, has been elected to the United States Senate on the Tennessee Democratic ticket.

North Carolina Association to Meet at Pinehurst.

The Cotton Manufacturers' Association of North Carolina will hold its semi-annual session at the Carolina Hotel, Pinehurst, N. C., on November 28 and 29. The first session will be a banquet on the evening of the 28th.

A golf tournament will occupy

SHEETING AND DRILLS WANTED IN QUANTITY

36" 40x40—6.15
36" 48x48—5.50

36" 48x48—4.00
40" 56x60—3.60

Also 56"—60" Drills and Sheetings

Manufacturers' Selling Agents, Distributors and Commission Merchants
Correspondence Solicited

THE LANDERS BROS. CO., Toledo, Ohio

the morning and afternoon on the 28th and the business session will be held Saturday morning, the 29th.

A very interesting program is being arranged by Hunter Marshall, Jr., secretary of the association.

Obituary

Joe C. Smith.

Joe C. Smith, secretary and treasurer of the Shelby Cotton Mills, Shelby, N. C., and one of the most prominent manufacturers in his section, died Tuesday at his home in Shelby. He had been ill for some weeks with heart trouble.

Mr. Smith was 70 years old. He spent his early life in Charlotte, but moved later to Newton, where he was interested in several mills. In 1905 he went to Shelby as treasurer of the Shelby Cotton Mills, which he successfully managed until his death. He was also treasurer of the Planters and Merchants Warehouse Company, of Shelby.

Mr. Smith is survived by his widow and three children.

S. C. Vann.

Samuel C. Vann, president of the Sterling Mills, Franklinton, N. C., died on Tuesday at his home in that place. He was 73 years of age and for years had been a leading manufacturer and business man, banker and merchant. He organized and built the Sterling Mills in 1895. Later on he purchased practically all the stock and managed the affairs of the company so successfully that the mill was twice enlarged under his management.

Mr. Vann was greatly interested in religious and civic work. He was a large contributor to the Methodist Orphanage in Raleigh and in 1920 donated a \$300,000 school building to the town of Franklinton.

Roanoke Mill No. 1. Roanoke Rapids, N. C.

29,808 spinning spindles; 850 looms.
A. L. Baine _____ Gen. Supt.
J. E. Shaw _____ Asst. Supt.
J. H. Hines _____ Carder
J. R. Turner _____ Spinner
J. R. Burton _____ Weaver
J. M. Underwood _____ Cloth Room
T. J. St. Sing _____ Master Mechanic

WELL DRILLING AND DEEP WELL PUMPS

We do the engineering, and have had 32 years experience solving water problems satisfactorily for textile mills.

Sydney Pump & Well Co., Inc.
Richmond, Va.

Bobbins and Spools

Particular attention given to
**All Types Of Warp
Bobbins For Filling Wind**
Samples of such bobbins gladly
furnished

The Dana S. Courtney Co.
Chicopee, Mass.

A. B. CARTER, Southern Agt, Gastonia, N. C.

Artificial Silk

This is comparatively a new material for fabric making but is rapidly growing in favor for mixed fabrics, especially with cotton mills on all sizes of average numbers, fine and coarse. The artificial silk yarn is so different from yarn of any other material that it requires special attention to the harness-eye in order to make a satisfactory fabric.

From the very first, when this new material began to be used, we have been making heddles for artificial silk yarns and have continued to improve and perfect the harness-eye until now it is generally conceded that any mill, whether making cotton, silk or other fabrics, can without hesitation depend upon our artificial silk loom harness to make a fabric with entire satisfaction. And the beauty of it is that these heddles are interchangeable for use on cotton, silk, and yarns of other material just as well.

STEEL HEDDLE MFG. CO.

GREENVILLE

PHILADELPHIA

PROVIDENCE

"Duplex" Loom
Harness—complete
Frames and
Heddles fully
assembled

Salvage Harness
Leno Doups
Harness Frames
Jacquard Heddles

SOUTHERN PLANT

Greenville, S. C.

HAMPTON SMITH
Southern Manager

Drop Wires
Nickel-Plated
Copper-Plated
Plain Finish
Improved
Loom Reeds
Leno Reeds
Lease Reeds
Combs

MILL NEWS ITEMS OF INTEREST

Whitehall, Ga.—The Bahnson Company, Winston-Salem, N. C., has been given contract for the humidifying equipment for the new weave room of the Larnell Cotton Mills.

Rutherfordton, N. C.—Work has been started upon the new addition to the Grace Mills, which will provide room for 8,000 additional spindles. J. E. Sirrine & Co., Greenville, are the engineers.

Anderson, S. C.—W. E. Cason has been elected secretary of the Brogon Mills, succeeding G. T. McGregor, who recently resigned. S. B. Lander has been named assistant treasurer.

Greenville, S. C.—The Southern Weaving Company, which some time ago began operation here making automobile brake bands and similar goods, has increased capital stock from \$150,000 to \$180,000.

Union, S. C.—The addition to the Excelsior Mills is being pushed rapidly and contract for the humidifying equipment has been awarded the Bahnson Company, Winston-Salem, N. C. J. E. Sirrine & Co., engineers.

Charlotte, N. C.—The Charlotte Knitting Mills will soon install machinery for making women's full fashioned silk hosiery. At present, the mill knits men's socks and finishes and inspects hose made at the Forest City and Rock Hill mills.

Dillon, S. C.—The Dillon Mills here and at Hamer, S. C., have been sold to M. L. Cannon, Charlotte, J. W. Cannon, Jr., of Concord, and associates. The new owners have incorporated the Carolina Textile Corporation, of Charlotte, to take over the mills and will assume control this week. The two mills have a total of 40,500 spindles and for the present will continue to make carded yarns.

Shelby, N. C.—J. R. Dover, president of the Eastside Mills and the Dover Mills, and associates, will build a new mill here to be known as the Ora Mills. The company, which is capitalized at \$400,000, plans a mill of 6,000 spindles and 200 looms to make semi-specialties. J. E. Sirrine & Co., Greenville, S. C., are the engineers.

Greenville, S. C.—The new addition to the underwear plant being erected by the Nuckasee Manufacturing Company, F. W. Symmes, president, and J. D. Smeak, secretary, has practically been completed. Erected at a cost of \$35,000, the building is two stories, brick, with concrete foundation, maple floors and gravel roof. The company is capitalized at \$200,000 and produces athletic underwear, having a daily output of 550 dozen.

THE FARISH COMPANY

COMMISSION MERCHANTS



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NEW YORK



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J. T. AUST, Secretary and Assistant Treasurer

JOAB MULVANE, Vice-President and Treasurer

CHICKASHA COTTON OIL COMPANY

Capital Stock \$1,350,000.00

COTTON DEPARTMENT

W. M. RATTAN, Manager

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Chickasha—Oklahoma

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DARY TRAVELERS

If it's a DARY Ring Traveler, you can depend on it that the high quality is guaranteed—that the weight and circle is always correct, and that all are uniformly tempered which insures even running, spinning or twisting.

Ask for prices

DARY RING TRAVELER COMPANY

311 Somerset Ave.

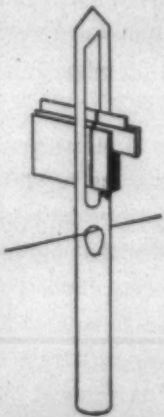
JOHN E. HUMPHRIES
Greenville, S. C.

Fred H. Dary, Mgr.

—Sou. Agents—

Taunton, Mass.

CHAS. L. ASHLEY
Atlanta, Ga.



K-A Electrical Warp Stop For Looms

is backed by twenty years of experience and steady growth. It is adopted by representative mills weaving cotton, silk, worsted and woolens.

R. I. Warp Stop Equipment Co.

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CHARLOTTE, N. C.

101 Marietta Bldg.
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LANDSCAPE ARCHITECT and ENGINEER

Town Planning and Mill Village
Developments
Parks, Real Estate Subdivisions
and Cemeteries
Resort Hotels and Country Clubs
Private Estates and Home Grounds

Complete Topographic Surveys
General Designs, Planting, Grading
and Detail Plans
Supervision of Landscape and
Engineering Construction
Sewer and Water Development

Largest Landscape Organization in the South

Mount Holly, N. C.—The American Yarn and Processing Company will not install machinery for manufacturing shoe laces, the recent report to that effect being erroneous.

Hemp, N. C.—The County Moore Mills, which have been under construction here for some time, are practically completed and will begin operation within a short while. The mills have 300 looms for the manufacture of fine and fancy colored goods. W. W. Cowgill is president and H. G. Leigh, superintendent.

Huntsville, Ala.—Only one textile mill in the Huntsville district is standing idle now, all the others being on full time or more, according to a survey of the local situation. The Margaret Mill, which has been idle several weeks, has not resumed and machinery is being overhauled in the meanwhile. The Lincoln Mills and the Huntsville Knitting Mills have recently put on day and night shifts, having booked orders that will keep them busy at this rate for some time to come. The West Huntsville Cotton Mill has gone on full time. Dallas, Merrimack and Lowe having been running on full time for quite a long time. Many mill operatives who have been out of work are now back on full pay and this is having an appreciable effect in all lines of business here.

Fort Worth.—Worth Mills, which will manufacture cord tire fabric, will begin operations on December 1. This plant was brought here from Massachusetts through the efforts of Rudy Copeland and the Chamber of Commerce.

The product will be sold through Harding Tilton & Co., of New York and Boston. According to reports here the output of the plant for the first six months has been contracted for by several tire manufacturing companies in the North. The capacity is approximately 3,000,000 pounds annually. D. D. Towers is mill agent. Machinery is now being installed and it is expected to be in full swing not later than December 15. It will be electrically driven, the power to be furnished by the Fort Worth Power & Light Co. plant.

According to Charles L. Harding, of the Harding Company, who recently visited Fort Worth, negotiations have been entered into between the Chamber of Commerce and other Eastern mills, for their removal here. The Fort Worth business men interested are either wholesalers, manufacturers or heads of large industrial plants.

Escaping Gas Causes Panic in Mill.

Fall River, Mass.—Hundreds of employees of the American Printing Company's plant in this city fled in panic when sulphur dioxide gas escaping from a large tank in the blue

dye room filled the building. Four employees were taken to a hospital, unconscious.

Fifty-five others were treated at the company's hospital.

The fire department was called out to assist in rescuing employees, many of them women, who were on upper floors of the factory and feared to descend the stairs in the face of the fumes from the dye room, which was on the ground floor. Ladders were raised and many were carried down from windows of the second and third floors of the building.

Estimates 12,816,000 Bales As 1924 Yield

Washington, No. 8.—Cotton production will be 12,816,000 equivalent 500-pound bales this year, the Department of Agriculture forecast today. A fortnight ago 12,675,000 bales were forecast.

Of this year's crop, 9,694,920 running bales, counting round as half bales, had been ginned prior to November 1, compared with 7,556,042 bales last year and 8,139,215 bales for 1922 to that date, the Census Bureau reported.

The forecast of production was based on the condition of the crop on November 1, which was 55.9 per cent of a normal compared with 54.7 on October 18 this year and 47.8 on October 25 last year. Last year's production, according to final ginning returns, was 10,139,671 equivalent 500-pound bales.

The condition of the crop on November 1 and the forecast of production by States follows:

Virginia, condition, 49 per cent, and forecast 33,000 bales.

North Carolina, 49 and 770,000.

Tennessee, 59 and 365,000.

Ginnings prior to November 1 by States includes North Carolina 374,554; Tennessee, 203,543; Virginia, 6,127.

Total ginnings include 239,535 round bales compared with 199,326 to November 1, last year, and 1,852 bales of American-Egyptian, compared with 11,551 last year.

The revised total of cotton ginned this season on October 18 was announced as 7,615,761 bales.

COMPLETE DYEHOUSE EQUIPMENT

Special Machinery for Textile Mills
The Klauder-Weldon Dyeing Machine Co.
Bethayres, Pa.

LOOM STRAPPING

Check Straps--

Lugs,

folded and stitched, cemented—

Rounded and flat

Harness Straps--

Bumpers--

Hold-ups--

Binder Straps--

Power Straps--

Friction Discs--

We specialize and know your looms.
Ask your jobber.

The Druid Oak Belting Co., Inc.

Baltimore—Boston



Hello! Traveler Man. What's Your Hurry?



I am taking some FREE samples to another mill. Why don't you send for some? You won't regret it. Just send us a postcard stating what sizes and styles you would like to try and you will receive a liberal assortment without cost, by return mail.

VICTOR RING TRAVELER COMPANY

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Southern Agent
A. B. CARTER

Providence, R. I.

615 Third National Bank Bldg.
Gastonia, N. C.



GREIST

LOOM
DROP WIRES

All we ask is the opportunity to quote you—send sample of wire with request for quotation—we will submit samples of our product—prompt deliveries and unlimited capacity for large orders—small requirements receive the same attention.

THE GREIST MFG. CO., Dept. R, New Haven, Conn.

Southern Representative:

James McCabe, P. O. Box 219, Greenville, S. C.

May Hosiery Mill in Label Case

Washington.—The Federal Trade Commission has issued this statement:

"In an order issued by the Federal Trade Commission, the May Hosiery Mills, of Burlington, N. C., are prohibited from using as labels or brands on hosiery sold by them the word 'silk' unless the hosiery so labeled is made entirely of the silk worm or where the hosiery is made partly of silk it is accompanied by a word or words truthfully describing the other material or materials.

"W. H. May and B. V. May are named in the complaint individually and as partners in the company.

"In its investigation of the case the commission found that the respondents sold and shipped hosiery made of cotton and containing no free silk, which were marked and branded with labels containing the words 'Made of cotton and art silk in the U. S. A.' No other words were on the labels to indicate the kind and grade of material of which the hosiery was manufactured. The commission found that respondents' labels so used misled and deceived the trade and consuming public into the mistaken belief that respondents' hosiery is composed in part of silk, and caused the purchase of such hosiery in that belief."

India's Cotton Acreage Largest in 32 Years.

Washington.—The largest cotton area in 32 years in India is indicated in the cablegram received by the Department of Statistics, which gives the area planted to October 1 as 21,785,000 acres. On the basis of the average proportion off the area planted by October 1 in the last 12 years, a total acreage of 26,247,000 acres might be expected, the Department of Agriculture states, and adds that it is possible that more than the average percentage of area has been planted by October 1 this year.

ARTESIAN WELLS

27 Years' Experience
9 Complete Rigs Operating Every Southern State
Virginia Machinery & Well Co., Inc.
Box 1212 Richmond, Va.

THE CHOICE OF A HUMIDIFYING SYSTEM

must be one that for simplicity with great capacity and economy in maintenance produces uniformly such conditions that may be determined for the different requirements of the work. In the American Moistening Company's method of humidifying, all such requirements are GUARANTEED.

Our COMINS SECTIONAL HUMIDIFIERS

Our FAN TYPE and HIGH DUTY HUMIDIFIERS

Our VENTILATING Type of Humidifier (Taking fresh air into the room from outside)

Our ATOMIZERS or COMPRESSED AIR SYSTEM

Our COMPRESSED AIR CLEANING SYSTEM

Our CONDITIONING ROOM EQUIPMENT

Our AUTOMATIC HUMIDITY CONTROL (Can be applied to systems already installed)

Our AUTOMATIC TEMPERATURE CONTROL

Are all STANDARDS OF MODERN TEXTILE MILL EQUIPMENTS

AMERICAN MOISTENING COMPANY

BOSTON, MASS.

SOUTHERN OFFICES, 276 Marietta St., Atlanta, Ga., No. Charlotte, N. C.

RUSSELL GRINNELL, President

FRANK B. COMINS, General Manager

66° TEXTILE CLEAR SULPHURIC ACID

Manufactured Especially for the Textile Trade by the
Largest Sulphuric Acid Producer in the World

ALSO

60° and 66° Commercial Sulphuric Acid

PROMPT SHIPMENT

Any Quantities in Tank Cars, Drums, or Carboys—

Write Us for Prices

SOUTHERN AGRICULTURAL CHEMICAL CORP.

ATLANTA

GEORGIA



MILLS AT
MONTICELLO GA.
AND TOECANE, N.C.

**JORDAN
MANUFACTURING COMPANY
BOBBINS**

MONTICELLO, GEORGIA

SCOTT TESTERS

The Standard of The World For Tests of Fabrics,
Yarns, Twines, Etc.

Manufactured By
HENRY L. SCOTT & CO.
101 Blackstone St.
PROVIDENCE, R. I.

Represented in New York By
United States Testing Company, Inc.
316 Hudson St., New York City

Manufacturers of Speeders,
Bobbins, Cap Spinning Bobbins,
Skewers, Warp Bobbins, Filling
Northrop Loom Bobbins, Twist-
er Bobbins, Twister Spools,
Warper Spools, Comber Rolls,
Quills, Underclearer Rolls (plain
or covered).

U S Bobbin & Shuttle Co.

57 EDDY STREET

PROVIDENCE, R. I.

SHUTTLES

We make a specialty of
Shuttles for all makes of looms,
both plain and automatic.
Correspondence solicited.

"HIGH GRADE"

BOBBINS
SPOOLS
SHUTTLES
SKEWERS
ROLLS, ETC.
OF EVERY DESCRIPTION

THE
DAVID BROWN COMPANY

Lawrence, Mass.

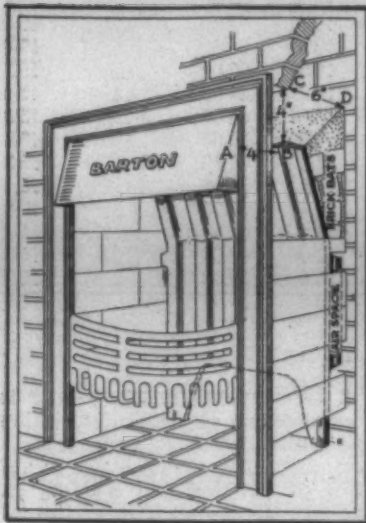
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Catalog on Request

AUTOMATIC SHUTTLES

Try Our New Automatic Shut-
tles for either cotton or woolen
weaving. It is meeting every
requirement with entire satis-
faction.

The Permanent Way to Make Repairs, is to Use Metal Fire Backs.



If you like smoky fire places DO
NOT USE this grate.

ERNEST L. BARTON

Specialties

302 N. Tryon St.

Charlotte, N. C.

Efficiency

Efficiency is the science of doing things right. This is the reason for the special purpose alkalies

**WYANDOTTE
TEXTILE SODA**

**WYANDOTTE
CONCENTRATED
ASH**

**WYANDOTTE KIER
BOILING SPECIAL**

These facts can be easily proved in your mill or the trial costs nothing.

Ask your supply man



The J. B. Ford Co., Sole Mfrs.
Wyandotte, Mich.

Studying the Job

(Continued from Page 19)

cost and with no impairment in the quality of the work.

There has been a vast amount of discussion in recent years regarding loom fixers. If a fixer really possesses mechanical ability, why should he break his back trucking warps the length of the weave room, lifting them into the loom, taking out leases, etc.? No mechanical ability is necessary to perform this sort of work.

A number of mills have found it advantageous to relieve their fixers or section men from such duties and increase the number of looms per man. If a bonus, in addition to the regular going rate of wages based upon quality and quantity of work, is paid the mill will receive its share of the returns.

Is it not about time for the up-to-date mill manager to discard the old moss-covered idea that the weave room is necessarily running fine when the fixer is sitting in the window reading the newspaper or is asleep under his bench? A real live fixer or section man working under a good bonus arrangement is up on his feet attending to the duties for which he is paid, and in a great many instances anticipates troubles before they really cause much damage.

I have endeavored to point out, briefly, a few conspicuous places in the mill where "Studying the Job" will produce dollars-and-cents results, not only for the mill, but for the operatives as well. One of the most important points in this whole discussion is the fact that once the jobs have all been rearranged in accordance with a carefully studied plan the operatives will not work any harder than they do under the old method. The suggestions outlined are not mere theory which look well in print but are facts which have been put into successful operation by hard-headed, practical mill men. They have become an achievement rather than an aspiration.

Is there any reason why you should keep on trying to fool yourselves that the old mill is running about as well as can be expected, when a real systematic study in the various departments will convince you that it can be made to run better? There are a great many time-honored facts about a cotton mill that "would be so if they were true."

It would be sad, indeed, if we had reached the point where nothing further could be done in the direction of reducing costs in the manufacturing of textile products. Real progress means that we are not entirely satisfied with the way we did things last year but continually seek better and more efficient methods of accomplishing the desired result.

Do you suppose for one minute that your freckled-face office boy could go up town and drive away a brand new "flivver" for \$300 if Ford's organization were not eternally "studying the job" and introducing new methods and schemes from day to day which pass the "acid test" of lowering the cost?

UNIFORM IN APPLICATION

Victrolyn

A dependable assistant in sizing Cotton Warps

SOLE MANUFACTURERS

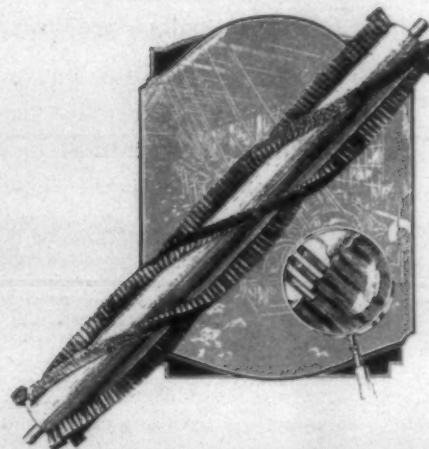
Bosson & Lane

Works and Office, Atlantic, Mass.

Guaranteed Textile Brushes

PERKINS PRACTICAL BRUSH

ATLANTA BRUSH COMPANY



BRUSH REPAIRING

Many brushes used by cotton mills are so constructed that the block or core is quite an item in their cost. And these cores remain practically perfect for years though the bristles become so worn that the brush as a whole is of no value. The rebristling of these brushes, or refilling, as the case may be, can be done at a great saving and the brush is fully as efficient as when it was new.

For this important end of our business, we have a special department managed and operated as an individual unit of our business. This department is thoroughly capable of giving you expert advice on repair work or the rebuilding of cylinder brushes according to your specifications.

ATLANTA BRUSH CO.

Atlanta, Ga.

ATLANTA BRUSH COMPANY

A Brush for Every Textile Need

For those of you who did not attend the Textile Show

It was too bad that you missed the many new ideas and improvements that have been developed since the last show.

At "Shuttle Headquarters" for instance, there was an unusually interesting display of Shambow "Custom Built" Shuttles.

They created much favorable comment. But, because you did not see them at the show is no reason why you shouldn't have an opportunity to see them.

We are prepared to send you a man who will show you shuttles and weaving devices of great interest to you. He is a Shuttle Engineer and should you require it, he is fully capable of redesigning your present shuttle or designing an entirely new model for you.

This expert service won't cost you a cent and may save you much money. Just sign and mail the coupon, or write us.

SHAMBOW SHUTTLE COMPANY

Woonsocket, R. I.

John C. Shambow, H. H. Ullman,
Pres. & Treas. V. Pres. & Gen. Mgr.

Paterson, N. J. Greenville, S. C.
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SHAMBOW MAKES

shuttle bills
smaller,

interruptions
fewer,

productions
greater,

SHAMBOW SHUTTLE COMPANY Woonsocket, R. I.

We will be interested to learn more about the new shuttles, tensions, threaders and other devices without obligating ourselves in any way.

Company _____

By _____

Address _____

Carding and Spinning

(Continued from Page 17)

Table for Numbering Roving Yarn

Number of Roving or Yarn	Weight of 12 Yards Roving	Weight of 120 Yards Yarn	Number of Roving or Yarn	Weight of 12 Yards Roving	Weight of 120 Yards Yarn	Number of Roving or Yarn	Weight of 12 Yards Roving	Weight of 120 Yards Yarn
46.75	---	21.4	52.50	---	19.0	61.50	---	16.2
47.00	---	21.2	53.00	---	18.9	62.00	---	16.1
47.25	---	21.1	53.50	---	18.7	62.50	---	16.0
47.50	---	21.0	54.00	---	18.5	63.00	---	15.0
47.75	---	20.9	54.50	---	18.4	63.50	---	15.7
48.00	---	20.8	55.00	---	18.2	64.00	---	15.6
48.25	---	20.7	55.50	---	18.0	64.50	---	15.5
48.50	---	20.6	56.00	---	17.8	65.00	---	15.4
48.75	---	20.5	56.50	---	17.7	65.50	---	15.3
49.00	---	20.4	57.00	---	17.5	66.00	---	15.1
49.25	---	20.3	57.50	---	17.4	66.50	---	15.0
49.50	---	20.2	58.00	---	17.2	67.00	---	14.9
49.75	---	20.1	58.50	---	17.0	67.50	---	14.8
50.00	---	20.0	59.00	---	16.0	68.00	---	14.7
50.50	---	19.8	59.50	---	16.8	68.50	---	14.6

SLUBBERS AND FLY FRAMES

As said in the beginning of the book, it is assumed that the reader is familiar with the machinery in a general way, and no extended description of the processes is given. So far as the useful work is concerned, a slubber is the same as a drawing frame; that is, it attenuates or draws out the strands into smaller ones. The matter of twisting and winding on bobbins is simply to facilitate the subsequent processes. The matter of twist is a very vital one, however, as on it depends not only the subsequent processes, but also production. The spindles run at a uniform speed, and if any variation of twist is wanted, it is made by changing the speed of the rollers. There is a maxim among carders never to change twist in order to gain production. This is subject to severe criticism. We once knew of a mill where part of the spinning was frequently stopped on account of lack of roving. A new carder took part of the twist from the roving, and there was soon plenty to spare. As the solid contents of cylindrical bodies varies as the square of their diameters, and as twist is governed by the size of roving, it has become a custom to regulate it according to the square root of the number. American machine builders have a uniform standard of 1.2 multiplied by the square root of the number. English builders use 1, 1.1 and 1.2 for the slubber, immediate and roving frames respectively. In case this is for ordinary cotton. Long staple cotton can run with much less twist. The amount of twist in fine roving is not governed so much by the running qualities of the machine, as by the ability of the roving to turn the bobbin and skewer as it is used in the spinning frame or mule. It is the opinion of the writer that very few mills run roving from 3 to 6 hank with standard twist. The roving will be too tender to turn the bobbin, and will be continually breaking. On the other hand, it is very easy to get too much twist, which will cause a loss of production, and by its hard nature injure the rollers in the spinning frames. Under ordinary conditions if the roving is strong enough, it will work better just at that point than if it were twisted harder. There are some spinners who claim that spinning runs better if the roving is twisted beyond this point, but the writer fails to see any good reason why this should be the case.

For the same reason that the twist is governed by the square root of the number, the lay of the roving also depends upon it. It is generally calculated at 12 times the square root of the number. This matter seldom receives the attention it deserves from overseers. It is true the frame will run with a very wide variation either way; that it, it will run for a while. If the lay is not right, the tension soon gets wrong, with all its resultant evils. If it is too tight, the roving may be very injuriously stretched before the attendant changes it. It is always bad management to have the attendant constantly doing this as the bobbin fills up, and is a sure sign that something is wrong. Except for slight changes, caused by damp weather, the tension should always remain the same.

A fly frame has more bearing surfaces than any other machine in the mill, and for this reason should receive more careful alignment and oiling than any other. Not only does lack of oil cause friction and unnecessary power, but it is the most fruitful cause of breakdowns and consequent loss of production. When the average fixer finds a steady-pin broken, or gear loose, he usually thinks it is the natural wear of the machine, and does not stop to consider that lack of oil or binding in the bearings may be the cause of the trouble.

The primary motions of the fly frame are the same as they were forty or fifty years ago, but matters of detail have been much improved. The compound motion as now built requires much less power and attention than formerly. The spindles have better oiling arrangements, the gears may be more easily changed, and there are many other minor improvements.

(Continued Next Week)

\$100,000 INVOLVED IN SUBURBAN LAND SALE

Seventy-five Acres of J. Van Lindley Estate Purchased by First Realty and Loan Company

Over \$100,000 was involved in the sale yesterday of 75 acres of the J. Van Lindley estate, located on the Winston-Salem road just north of the Masonic home, to the First Realty and Loan Company.

This tract of land has a frontage of about 1,700 feet on the Greensboro-Winston-Salem highway. The First Realty and Loan Company is planning to develop it into residential property. The sale was negotiated by T. V. Carter.

The land described above is planted in choice varieties of flowering shrubs, trees, etc., and a clearance price will be made on them to Textile plants or others interested, that can use a quantity. Write for full particulars.

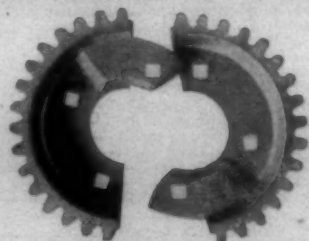
J. Van Lindley Nursery Co.
Pomona, N. C.

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**THIS 2-PIECE GEAR
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IN THIRTY MINUTES**

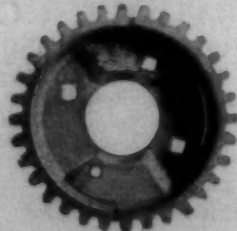
to any loom to replace a broken crank shaft gear. Saves material and time and also increases production.

Not a temporary makeshift but a permanent satisfactory repair part.

Write for sample.

Dan Gear Co.

Caroleen, N. C.



An Interesting Letter

Nov. 8, 1924.

Mr. Clark,
Southern Textile Bulletin,
Charlotte, N. C.

Dear Sir:

Being a subscriber to your Textile Bulletin, I am naturally interested in the various topics of discussion as per the columns.

I have gained an item of education through reading and study of your paper that has helped me in my training that I doubt seriously if I could have obtained it otherwise.

The latest question of interest, I believe, is the proposed Child Labor Amendment of the request for more power by that group of fanatics.

If you will permit a few words of personal matter, I believe that if I had gone to work at twelve years instead of twenty, I would have been much more successful than I am.

By not so doing I have missed much that a man must have in order to make a success of his life, and now I am spending time learning those things that should have been learned at a much earlier age—things that I missed because I did not have an opportunity to learn while at this age. My time was then being used in learning the things that life itself would have taught me—things that I doubt seriously if they ever matter a tinkers d— unless a man is expected to be a perfect cake eater or lounge lizard.

I have a son who, if God spares him, and I live long enough to steer him past the pitfalls set by a bunch of fools comprised chiefly of old maids who detest motherhood yet who desire to tell the world how children should be manufactured into men and women and the cohorts of these same old maids who have never done anything worth while, yet seem proud of it. If I can see this son of mine safely past this bunch of yapping mollycoddles I firmly believe that his chances for success will be much better than mine are now or ever will be.

Pardon this long letter, but this stuff has been accumulating for some time and I just had to get it off of my chest.

If you care to use this in print, go to it, and if the occasion arises that you need my full name and address attached to a signed statement as to who I am you bet your reputation you will get it post haste.

Yours very truly,

A SUBSCRIBER.

Amoskeag Announces Cut in Gingham Prices.

New York, Nov. 8.—Reduction in gingham prices announced today by the Amoskeag Manufacturing Company, included a cut of three cents a yard to 12½ cents for one grade, which was considered the most drastic since the sharp break in prices four years ago.

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BELTING AND OTHER LEATHER PRODUCTS

Since 1835

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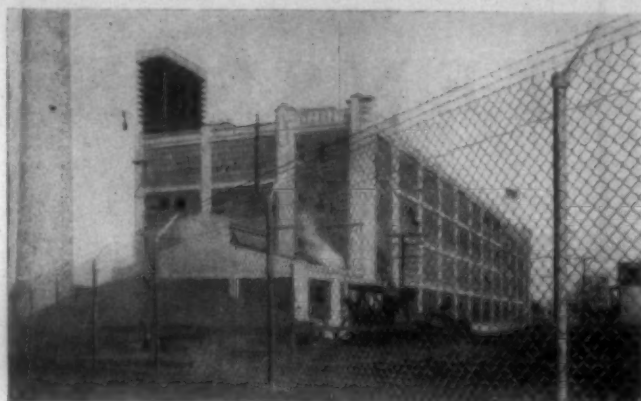
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Anchor Post Fences

PERMANENT—BECAUSE THEY ARE GALVANIZED



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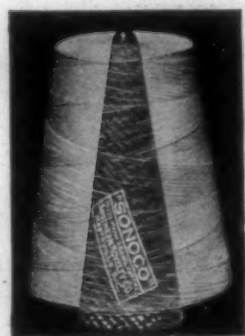
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and, consequently, a larger saving for the purchaser. Phone or write our nearest representative for complete information on this and other advantageous Anchor Post features.

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Use Dixon Patent Stirrup Adjusting Saddles, the latest invention in Saddles for Top Rolls of Spinning Machines. Manufacturers of all kinds of Saddles, Stirrups and Levers.

WRITE FOR SAMPLES

Significant Savings in Textile Mill Operations

(Continued from Page 10)

they might be poorly or well controlled. As a final result of this work, the operation of the slashers has been practically removed from guesswork almost to an exact art. The overseer is able to impose on the machines the exact schedule for each grade of warps, which he knows to be proper for uniform results. The guess work element has been removed completely, because the size itself is boiled under strict control and a recording device gives a permanent record of every batch of size and shows whether it was properly boiled at the proper time and for how long. A size recirculation insures a constant supply of uniform size to every slasher. At each slasher, the size box automatically regulated to a fixed temperature predetermined as best for the purpose. Each slasher runs at a fixed speed for a given grade of warps, the speed depending on the heaviness of the goods and certain other factors. For the control of the operative has a speedometer which is graduated in terms of the style of goods being run. If he is slashing a D warp, the machine is run with the indicator of the speedometer on the letter D, and so on. The beneficial results of this work are shown in the reduction of the fluctuations in the sizing of the warps to half their former magnitude. The maximum possible speed of the machines is also being obtained safely, due to the strict regulation. This results in faster production, accompanied by much improved uniformity in the product and consequently the lowest possible production cost. To one familiar with the usual uncertainties of slashing, this work will be of especial interest and significance.

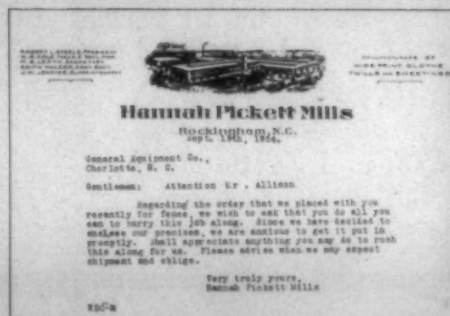
A study of the method of preparing the filling spinning frames for doffing showed that the average average length of yarn left on the end of the bobbin to be pulled off by the battery girls in the weave room was sixty inches, the lengths varying from one to three yards. This great variation in lengths made it difficult to standardize the work of the battery girls as to the amount of yarn that they should pull off, which becomes waste. A stop motion for the spinning frame was developed, resulting in a uniform length of about eighteen inches to be pulled off by the battery girls. This saved a great deal of the battery girls' time and also cut down the amount of waste.

A rearrangement of many of the jobs along the lines of specialization is extremely advantageous to the management and to the operatives resulting in increased earnings to the latter and lower machine costs to the former. A revolutionary change in the weave room is an excellent illustration, showing that much can be done along these lines in the textile industry. The weavers were in the habit of doing work other than actual weaving. The average weaver's duties, in addition to running the looms, were to be on the watch for cut-marks, to remove

the cloth roll at the cut-mark, to make pickouts and to aid the room-girl in mending smashes, to help the battery girls, and in some cases, to make minor repairs to the looms. The loom-fixer's duties were to repair and adjust looms, and to put in new warps, removing the empty beam and lease, with the necessary trucking to and from the "spare floor." In the performance of these duties, he went to the supply room for supplies, helped other fixers with big jobs, and made rounds of the looms of his section every day to estimate the numbers of new warps needed on the following day. There was a loom cleaner for every fixer, because the looms were cleaned thoroughly before a new warp was put in. A careful analysis of each of these jobs was made and the final result was a rearrangement of the work in the entire weave room. The operatives are instructed what to do and what not to do. The weavers do nothing but weave. They have time to look over the cloth on the looms for weaving defects, and to look over the warp threads for bunches and bad places, which are liable to cause breakage. The former battery girls, who put filling yarn into the loom batteries, are now weavers' helpers since they assist the weavers in any of their duties. The cloth is removed by schedule, each loom being doffed once a week by men who have a special truck to use in taking the rolls to the conveyor. The design of the truck was worked out to eliminate lifting the rolls, which contain twice as many yards as formerly, when the looms were doffed by the weavers approximately twice a week. The larger cloth roll means a saving, due to less loom stoppage and less waste of cloth in the cloth room.

The loom fixers' duties are reduced to answering the call of the weavers to looms needing repairs. All work formerly done by the fixers pertaining to removing leases and empty loom beams and putting in new warps, is done by a crew of men under the direction of a foreman, who has charge of the loom cleaners also. These men are assigned to the loom needing changers and cleaners and are available for work in any part of the weave room. The supplies for the fixers are brought to them, each fixer having his own bag which is filled each day. The weavers and loom fixers are now working on more looms, but their work is not any more difficult under the new arrangement. The earnings of the weavers, fixers, and helpers were increased because of the saving in the number of weave room operatives, and of the increase in production per operative per hour. The production per loom per hour under the new method remained practically the same as under the old method. One of the older weavers who has been with us for many years was reluctant to attempt the work under the new arrangement. After a short time as a weaver's helper she asked for a weaver's job. Although her earnings under the old method were less than the average (Continued on Page 35)

Another Southern Mill Specifies Page Protection



The illustration above shows the type of Page Fence chosen by the Hannah Pickett Mills of Rockingham, N. C., one of the South's largest Textile Mills. This is Page Fence, Style 5-TR, a popular choice of industrial property owners, giving positive protection

against theft and intrusion. The Page super-heavy zinc coat, approximately 5 times heavier than that on ordinary galvanized wire, assures rust-resistance—long life—property protection at the cost of a few dollars per year.

Why not install PAGE Protection on your property? Ask our experienced fence men for plans and estimates—no obligation, Phone, wire or write.



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Improves Weaving"

NORFOLK . . VIRGINIA

Finishing of Lace and Light Cotton Fabrics

(Continued from Page 12)

or devtrin. Special effects such as waterproofing or fireproofing are occasionally required.

Lace goods of all kinds are liable to lose color or develop discolorations or become tender when stored for any length of time. These defects are found generally in goods which have been exported, and are the cause of many disputes as to responsibility for damage.

Tendering is due to one or more of the following causes, viz.: (1) Insufficient washing after scouring; (2) overbleaching; (3) the presence of traces of an oxygen carrier such as copper; (4) bacterial decomposition of either the cotton or the dressing; (5) the gradual liberation of a strong acid from its natural salts by a weaker acid.

Of these, the first two are easy to avoid, but the others present more difficulty. Oxygen carriers or catalysts are undoubtedly sometimes responsible for the gradual breaking down of light cotton goods when exposed for a long period to the action of air and light. It has been shown that oxygen and actinic light cause the destruction of cellulose, owing to the formation of oxy-cellulose. The presence of even traces of an oxygen carrier, such as a copper salt or oxide, is sufficient to accelerate greatly this effect. It may be noted that copper salts have a considerable germicidal action and are sometimes added to finishing mixtures for this reason. Bacterial action may cause tendering even in undressed goods. Many common aerial organisms, such as bacillus subtilis, grow readily on cotton under suitable conditions, producing gradual destruction of the cuticle and cell walls, accompanied by a decreased tensile strength.

Thaysen and Fleming have shown that micro-organisms do not develop on cotton unless at least 9 per cent of moisture is present. Goods which have to be kept for long periods in a warm, damp atmosphere are often damaged by bacterial action, especially if dressed with starch or dextrin. An antiseptic, such as boric acid, sodium fluoride or beta-naphthol, is often mixed with the dressing to delay or inhibit bacterial growth in export goods. The tendering of lace results sometimes from the action of acetic or tartaric acid or sodium sulphate or chloride. When these acids are dried into cotton, which contains neutral sodium salts, it may cause the liberation of small quantities of sulphuric acid. These transform the cotton gradually into hydrocellulose. But discolorations and loss of color are chief trouble with fine cotton goods. The most common cause is incomplete removal of the cotton waxes during the lye boil. The cotton waxes are all highly colored. If they are present in bleached goods they work their way slowly to the surface even of a starch dressing. This is assisted by a warm atmosphere. Hence less color, due to this cause, is found chiefly in goods which have been subjected to the warm atmosphere of a ship's hold or to a climate

mate with a high mean temperature. Thus, it happens sometimes that goods passed as satisfactory, when bleached and finished, are subsequently returned as unsaleable from Antipodean customers. A somewhat similar discoloration is produced by calcium and magnesium soaps. These, although white at first, develop in course of time a yellow or yellowish-brown tint. This is due to two causes, viz., a physical change in the soap itself, under the influence of light and the gradual liberation of its fatty acids, followed in some cases by their oxidation.

Blueing materials constitute another cause of trouble. With the exception of smalt, they are all rather transient in their effect. Coal tar dyes are generally fugitive when exposed for a long time to light, while ultramarine is very sensitive to acids; even traces of such weak acids as acetic acid decompose it with the production of a brownish color. If a blueing agent is used to cover either deficiency of bleaching or to correct the poor color of a starch, storing is often accomplished by deterioration of quality. Thin starches are used extensively for dressing lace goods. These, and also dextrans, are mixtures of varying proportions of starch, soluble starch, dextrin and dextrose. They are made, commonly, by the limited action of acids and heat on farina or maize starch. It is very difficult to prepare either soluble starch or dextrin in this way without producing at the same time dextrose. Commercial samples of dextrin and thin starch may contain from 6 to 10 per cent of dextrose. Moreover, much of the acid used is often left in the final product. Starches and dextrans containing dextrose are hygroscopic. The presence of dextrose in a dressing ensures the degree of moisture favorable to the growth of moulds or bacteria. Dextrose is itself a good food material for micro-organisms. Finally, all sugars become darker in color on keeping in a warm, dry atmosphere, owing to the formation of traces of caramel.

The discolorations already referred to are generally diffuse, but localized stains are also met with. Lead and iron stains or patches of mineral oil are examples. Lead stains are brownish, while those due to iron are reddish brown or red. Iron stains can generally be removed by means of hydro-chloric acid or oxalic acid, but lead oxide is not dissolved by these solvents. It is, however, soluble in warm ammonium acetate. Goods stained by iron become sometimes bluish black or black when allowed to lie in contact with any substance containing tannic acid. Another local discoloration observed sometimes in lace is that caused by aniline vapor. White lace, kept near goods dyed with aniline black, may become pink at the edges or exposed portions. This is caused by aniline which has volatilized from the black goods and condensed on the white fabric where it has become oxidized to a dyestuff, related to Perkin's mauve. White goods are liable also to become discolored by the growth of chromogenic bacteria or moulds. An inter-

esting case of this was investigated by the writer. Some net dressed with a thin starch, which had been passed after finishing, developed, when stored, a faint pink color so evenly distributed as to give the goods the appearance of having been dyed. Microscopic examination showed the presence of a mould. Cultures were made and the organism isolated. When sterilized cotton was infected with a culture of the mould, the pink color was quickly reproduced. A second batch of goods developed the same discoloration while standing after the soda boil, and it was probable that this was the point of infection, the spores being capable of withstanding the action of the chemic and sour and developing when the finished goods were stored in a warm atmosphere.

Finally, goods containing a tightly woven pattern exhibit occasionally distortion. This can be traced to local shrinkage during the lye boil, and is nearly always caused by putting a concentrated solution of caustic soda into the kier and then, after entering the goods, filling up with water. When circulation begins, this concentrated lye comes into contact with the goods before dilution and constant concentration can be effected, thus causing localized shrinkage. The tension produced is sometimes sufficient to break the finer threads. A less frequent cause is the exposure of boiled goods to the air before complete removal of the lye.—Textile Recorder.

British Research Report

(Continued from Page 8)

until all the processes could be controlled in the laboratory and it is now possible satisfactorily to mercerize, knit, bleach and dye yarns. The possible causes of unlevel dyeing are being carefully examined.

"Simultaneously with this problem an examination is being made of the bleaching and dyeing properties of different growths of cotton. It would greatly facilitate work if any members who are interested in this problem would supply samples of yarns of different growths of cottons for comparison with respect to bleaching and dyeing qualities. Yarns offered for comparison should be as near as possible of the same counts and twist—preferably single weft yarns 20s to 25s in the shorter staple cottons and twofold 40s to 50s in the longer stapled varieties.

Finishing Processes.

"Attempts have been made to elucidate the changes undergone by the cotton hair itself during the process of mercerization without tension. These volume changes have not previously been measured on account of the absence of a satisfactory method. It has now been found possible to measure them in different varieties of cotton in a standard mercerizing fluid and in one cotton in mercerizing fluids of different strengths. This fundamental work will enable progress to be made toward a knowledge of the behavior during mercerization of different growths of cotton and to the effect upon mercerization of tension and the strength of the

mercerizing fluid. Studies have also been made of the swelling of single cotton hairs in solutions of various hydroxides which may be used as mercerizing reagents. The work has been extended to fabrics and it has been established that the change in diameter of the cotton hair is much more important than the change of length in determining the effect of mercerization.

"A humidity meter for use inside a steamer or ager has been designed and is at present under construction in the workshops. In this same connection it has been found possible to evaluate the regain of cotton under the conditions associated with steaming and ageing and to deduce therefrom the limits within which the processes may be successfully run.

"The deformation of the cotton hair concerns so many processes from spinning to finishing that it has been found necessary to inquire into the influence of humidity and temperature upon the elastic properties of cotton. A rise of humidity at constant temperature or of temperature at constant humidity materially increases the stretch of a hair under a given load, and affects the extent of recovery upon removal of the load. In the case of strips of cloth in water under pressure at high temperatures the permanent stretch induced was relatively inappreciable.

Luster.

"The same photometer mentioned under the reference to the luster of doubled yarns has been used to measure the 'finish' produced on fabrics by mercerization in different ways and by schreiner under different conditions. Though a considerable amount of information on these subjects has already been accumulated, it is as yet too early to draw any general conclusions from the work. From an examination of 16 varieties of raw cotton with regard to the physical causes of their luster, it is concluded that the only physical factor governing luster is the shape of the hair cross section and that improved methods of mercerization resulting in more circular sections of the hair would give better effects.

Tendering.

"The tendering action of sulphuric acid on cotton hairs and yarns has been examined and the effect has been shown to be proportional to the strength of the acid used. A comprehensive examination of the tendering action of other acids has been completed and of the tests for tendering caused by acid attack. The results will shortly be communicated to members.

"Investigation of the viscosity of solutions of cotton in cuprammonium has shown that the measurement of viscosity can be used quantitatively as a comparative test of progressive tendering of cotton goods, consequent on any process in the course of their manufacture. The method is particularly suitable for testing small samples of cloth where strength measurements are not available, while it has been further developed as a criterion for deciding whether changes found in

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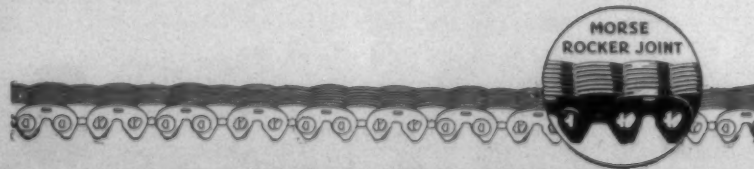
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a specimen of cotton have been caused by acids or by oxidizing agents.

"An examination has been made of the extent and nature of the destructive action of light on cotton, by the straightforward method of fully exposing cotton hairs in a standard beam of light and comparing the breaking load of the exposed hairs with that of similar unexposed material. Considerable progress has been made and the direct attack is widening to include the tendering of yarns of varying characteristics.

"The source of light so far used (the mercury arc) produces effects qualitatively similar to those caused by sunlight, but an attempt is now being made to standardize a light source which will supply an intense beam of light more accurately reproducing the 'white' light of the tropical sun. An extension of the work of fundamental importance deals with the determination of the fading of dyes on exposure to sunlight.

Black Oil Stains.

"A circular letter dated July 21, 1924, has been sent to all members of the association reporting the progress made with this work, which may be summarized as follows:

"The best method which has so far been discovered for the removal of oil stains from gray goods is by using a special soap in the following manner:

"The stained portion of the cloth should be placed on top of a pad of absorbent material such as blotting paper, flannel, or winder's listing, thoroughly moistened out with warm water, rubbed with the solid soap and then gently rubbed with a small pad of cloth dipped in hot water. As good a lather as possible should be obtained. In cases where there is obviously a lot of oil or grease present it is advantageous to give a preliminary treatment with an organic solvent, trichloroethylene being the best for the purpose.

"Arrangements have been made with Messrs. Lever Bros., Port Sunlight, for the manufacture of this soap, which will be on the market shortly and will be known as Shirley soap. It will be obtainable from Messrs. Lever Bros. direct in quantities of not less than a half hundred weight or through the usual mill furnishers.

"A method has been worked out in the laboratory for the removal of oil stains during the scouring and bleaching process, and very satis-

factory results have been obtained. The method is now being tried out on a works scale to see if it is equally successful and to get some idea as to its cost.

Removal of Iron Stains.

"The most efficient method for removing iron stains from gray cloth arrived at so far consists in the use of a solution of one ounce of oxalic acid and one ounce of potassium mydogen fluoride in one quart of water. The stained cloth is placed on a pad of absorbent material and the stain dabbed with a small pad of cloth soaked in the cold solution until the stain disappears, the excess of the reagent being then removed by washing first with water and finally with a little dilute ammonia to avoid leaving on the cloth acidic substances, which might cause tendering.

"The solution has been shown not to cause any appreciable tendering when left in contact with cloth for a period of 24 hours. This method is also being tried out on a works scale, with the objects of ascertaining its cost and also whether the removal of the stains in any way affects the finishing and dyeing properties of the cloth.

"Work on the removal of the stains is still in progress and any improvement which may be discovered will be duly notified to the members of the association. It would assist this work if members would send for examination any special cases of oil stains, e. g., in colored goods.

"Many experiments have also been made on the ageing of oil stains and in connection with the most suitable oils for use in various machines, but much remains to be done before a full report can be issued.

Testing Department.

"The new testing department commenced work in January of this year. It is accommodated in the new extension in one double unit and two single unit rooms which have now been equipped with the necessary furniture, fittings and installations. A plant is now being fixed in the two-unit room for the automatic maintenance and control of temperature and humidity at any values within the range likely to be met with in mill practice. The department will in all probability become eventually a very large one in which all routing testing will be carried out.

"So far attention has been mainly directed to the obtaining and standardizing of the necessary pieces of apparatus, and to the meaning and performance of existing trade machines under controlled conditions. It is too early to have much of importance to report, but it may be stated that a ballistic tester for leas of yarn is being developed, which avoids the disadvantages of the present lea test. Its results depend on the stretch as well as the breaking load, both equally important, and while the instrument is convenient enough for commercial testing, it is also sufficiently accurate for precise research."

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(Continued from Page 31)

age, in a very short time under the new arrangement, her earnings jumped into the class of the highest. Perhaps it would be well to say here that in making changes in the methods of operation some of our older operatives with many years of service to their credit find it difficult to adjust themselves to the new conditions, or even are unable to do the work successfully. In such cases the management pensions the worker for the long and faithful service rendered.

Other opportunities exist for successful accomplishment along the same lines as those adopted in the weave room. By arranging the jobs so that the difficult part of the work will have the attention of the skilled worker and the rest of the work will be done under a systematic predetermined method, there will result significant savings as well as increased earnings to the operatives.

Mill Situation in Fall River

(Continued from Page 24)

pressions from conditions and modern requirements and not those whose heads and whose hearts are as hard as flint.

The present temporary depression will pass away, but the South will continually call its challenge. The American Printing Company is not moving its making works South because it cannot make money in the North, but because it can make more money in the South. Employer and employee must co-operate to make it the interest of the cotton mills to stay in the North. And my closing advice to the operative is to be loyal to you, to stay by those who stand by you, to work for those who work for you, to seek out the mills that give you steady employment and stay with them in faithful service. Intelligent, alert and active management aided by a loyal and well-wishing and honest working body of employer. In my humble opinion, in the these two forces rests Fall River's future.

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Cotton Goods

New York.—The cotton goods markets were much more active during the week. Business in unfinished lines showed considerable improvement and sales of print cloths and sheeting were very large during the last three days of the week. There was more interest in finished lines and trade in fine goods was more active. Future buying was more active and some large contracts running into next year were placed.

Trade in print cloth and sheetings was much larger last week than for any similar period for many months. Converters, printers and bleachers were in the market for large supplies, one of the unusual features being that buyers proceeded to place orders without regard to the cotton market and the usual waiting attitude prior to the government cotton report was missing. Prices in print cloths and sheetings advanced. Fall River reported a very good business in the print cloth market.

There was active trading in 64x60 5.35 yard on Friday at 8 3/4 cents, but later prices moved to 8 1/2 cents for deliveries through February and March. Advancing prices were noted through Friday and Saturday, but buying continued large.

Prices on sheeting showed 13 1/2 cents for 3-yards, 10 1/4 cents for 4-yard, 10 1/2 cents for 56x60s. There was a moderate demand for drills and sateens.

Buyers showed considerably more interest in fine goods. Business in specialties that had been held up for many weeks was put through, and while in most cases, quantities ordered were small, the number of orders placed was large. In broadcloths, business was largely for prompt shipment, but there were a number of reports of contracts calling for delivery to begin in six weeks. Warps and sateens were quiet, with prices irregular and more offerings from second hands.

Business in tire fabrics continued fairly active and a number of contracts calling for January delivery were reported. There was slight change in prices and with carded peeler American cords 51 cents and slightly higher. Spot goods were reported scarce.

Only a limited amount of business was reported in cotton ducks. Prices on most constructions held very firm and buyers who went bargain hunting found it very hard to get goods at concessions. Many mills are so well sold ahead that they are not attracted by business at low prices.

Jobbers are reported to be making urgent demands of dress flannel manufacturers. It is said to be im-

possible to meet the demand and salesmen who have been calling on the trade find it difficult to face the importunities of the buyers.

Fancy goods contracts were placed that had hung fire for several months. The signs pointed to an extension in converting interest, but the preparations have developed slowly.

John V. Farwell Company, Chicago, says in its weekly review of trade: "The removal of election uncertainty has ushered in an easier business situation. Buyers have been in the market in much larger numbers during the week, and there is a tendency toward making commitments further into the future. This condition has also been helped by the naming of cotton goods prices by prominent mills, so the dry goods market feels that it can go ahead. Lingerie fabrics are in good demand for immediate delivery. Printed silks are leading in silks selling, with good demand for velvets, velveteens and corduroy fabrics. Silk, cotton and wool markets are firm. Raw silk advancing. Collections are fair.

Prices in primary markets were quoted as follows:

Print cloths, 28-in., 64x60s	6 1/2
Print cloths, 27-in., 64x60s	6 1/2
Gray goods, 38 1/2-in., 64x64s	9 1/2
Gray goods, 39-in., 68x72s	9 1/2 a 10
Gray goods, 39-in., 80x80s	12 1/2
Brown sheetings, 3-yard	14 1/2
Brown sheetings, 4-yard	11 1/2
Brown sheetings, stand.	15 1/2
Tickings, 8-ounce	26
Denims	19 a 20
Staple gingham, 27-in.	10 1/2
Kid finished cambrics	9 a 10
Dress gingham	17 1/2 a 20
Standard prints	9 1/2

Japanese Mills Losing Money.

Japanese cotton mills in Shanghai, practically without exception, are losing money at present, and their rate of operation is about 40 per cent of capacity, although they are doing everything possible to keep running, according to a Japanese Government official in Shanghai.—Trade Commissioner George C. Howard, Shanghai.

Silk production in Constantza District of Rumania amounted in 1923 to 695 pounds, practically all of which was consumed locally by the peasants who weave the silk by hand looms and primitive methods into cloth which, in turn, is made into wearing apparel. This fabric is usually bleached rather than dyed. (Vice Consul R. B. Haven, Constantza.)

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The Yarn Market

Philadelphia, Pa.—The yarn market was more active last week and the trade was more optimistic over the outlook than it has been for some time. Prices did not show any marked changes, although spinners' quotations were slightly higher and very firm. There was a well sustained demand for coarse knitting yarns for heavyweight underwear, a number of contracts being reported to run into January.

A pleasing factor in last week's development was the much better demand for combed yarns. Orders were considerably larger and prices higher. There has been a continuous demand for small and medium lots for the past two weeks and it has served to materially reduce stocks. As a result, mills have gotten new business in combed yarns at more satisfactory prices. There was some buying of 70-2 combed and a much better demand for 40-2 and 60-2. Sales made on the last three days of the week were very encouraging to spinners.

Business in mercerized yarns, which has shown much improvement in the past several weeks, continued fairly active last week. Some of the mercerizers report as good a business as they have experienced in the past several years.

On Friday and Saturday, spinners were asking 50 and 51½ cents for 30-2 carded warps and 45 to 47 cents for 20s. There was a moderate demand for carded weaving yarns and the carpet trade showed further interest for fair sized lots for future delivery. Sales of three-ply carded 8s from white stock were reported on a basis of 39 cents. Tinged yarns of the same numbers sold for 37 cents, orders covering from 15,000 to 25,000 pounds. The insulating trades took a fairly large quantity of yarns on the last two days of the week.

The yarn trade is anticipating a steady improvement in business during the next few weeks and feel that the demand which has been withheld for many weeks will develop rapidly.

Yarn prices in this market were published as follows:

Two-Ply Chain Warps.			
2-ply 6s	41 a	2-ply 26s	48 a49
10s	41½a42	2-ply 30s	50 a51
2-ply 16s	44 a45	2-ply 40s	56 a
2-ply 20s	44½a45	2-ply 50s	64 a
2-ply 24s	47½a48		
Two-Ply Skeins.			
8s	40 a	40s	54½a55
10s to 12s	41 a42	40s ex.	58 a59
14s	42½a	50s	64 a
16s	43 a44	60s	72 a73
20s	44 a44½	Tinged Carpet	
24s	47 a	3 and 4-ply 37	a38
26s	47½a48	White Carpet	
30s	50 a	3 and 4-ply 38½	a39
36s	53 a		
Part Waste Insulated Yarn.			
6s, 1-ply	35 a	12s, 2-ply	39 a
8s, 2, 3 and		20s, 2-ply	44 a44½
4-ply	35½a36	26s, 2-ply	47½a
10s, 1-ply and		30s, 2-ply	49 a50
2-ply	37½a		

Duck Yarns.			
3, 4 and 5-ply		3, 4 and 5-ply	
10s	40 a41	16s	44 a
12s	41 a42	20s	44½a45
Single Chain Warps.			
10s	41½a	24s	47 a
12s	42 a	26s	48 a
14s	43 a	30s	50 a51
16s	44 a	40s	56 a
20s	44½a45		
Single Skeins.			
6s to 8s	40 a	20s	44½a45
10s	41 a	24s	46 a
12s	42 a	26s	47 a
14s	42½a	30s	50 a
16s	43½a44		
Same Cones.			
8s	39½a	22s	43½a
10s	40 a	24s	44 a
12s	40½a	26s	45 a
14s	41 a	28s	46 a
16s	41½a	30s	47½a48
18s	42 a	30s tying in	47 a
20s	43 a	40s	52 a53
Combed Peeler Skeins, Etc.			
2-ply 16s	55 a56	2-ply 50s	70 a
2-ply 20s	57 a58	2-ply 60s	75 a
2-ply 30s	60 a62	2-ply 70s	85 a
2-ply 36s	60 a65	2-ply 80s	95 a
2-ply 40s	65 a67		
Combed Peeler Cones.			
10s	50 a	30s	60 a
12s	51 a	32s	62 a
14s	52 a	34s	64 a
16s	52½a	36s	65 a
18s	53 a	38s	68 a
20s	53½a	40s	70 a
22s	54 a	50s	75 a
24s	54½a	60s	80 a
26s	55 a	70s	90 a
28s	57 a	80s	96 a
Carded Peeler Thread Twist Skeins.			
20s, 2-ply	52 a	36s, 2-ply	62 a
22s, 2-ply	53 a	40s, 2-ply	64 a
24s, 2-ply	55 a	45s, 2-ply	69 a
30s, 2-ply	68 a	50s, 2-ply	74 a
Carded Cones.			
10s	47 a	22s	53 a
12s	48 a	26s	55 a
14s	49 a	28s	57 a
20s	52 a	30s	60 a

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First-class man to reneck and fit cotton mill steel rollers. None but a man capable of doing first-class work of this kind need apply. Cox Foundry and Machine Co., Atlanta, Ga. Station A.

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WANT POSITION as superintendent or overseer carding or spinning room. Familiar with fine and coarse numbers and know how to get satisfactory results. Good references. No. 4344.

Sept. Production of Hosiery Shows Gain

Washington.—A total of 3,880,976 dozen pairs of hosiery of all classes was produced during September, according to the regular monthly report on hosiery production made public by the Bureau of Census, Department of Commerce.

The report is based upon returns received from 331 establishments representing 419 mills. A comparative summary of production for August and September, based upon the output of 329 identical establishments, shows that during September 3,869,692 dozen pairs, all classes, were manufactured, as compared with 3,560,969 dozen pairs for the month of August.

September production of hosiery was classified as follows: 45,667 dozen pairs of men's full fashioned; 1,665,646 dozen pairs of men's seamless; 504,092 dozen pairs of women's full fashioned; 932,128 dozen pairs of women's seamless; 378,281 dozen pairs of boys' and misses', all styles; 339,919 dozen pairs of children's and infants', all styles; and 15,233 dozen pairs of athletic and sports, all styles.

Orders and stocks for the month were as follows: Shipments during the month, 4,407,465 dozen pairs; finished product on hand at the end of the month, 7,795,061 dozen pairs; orders booked during the month, 4,909,032 dozen pairs; cancellations received during the month, 132,301 dozen pairs; and unfilled orders on hand at the end of the month, 6,284,339 dozen pairs.

Textile Production Index Rises

Washington.—Textile production in September as measured by the Department of Commerce index, relative to 1919 as 100, stood at 94, which may be compared with 78 in August and 99 for September a year ago. The manufacturing production of leather stood at 87 in September, 80 in August, and 90 in September, 1923.

The index number for manufacturing production based on 64 commodities, also relative to 1919 as 100, was 113 for September, 113 for the same month last year, and 109 for August, 1924.

Production of raw materials as measured by the index for 51 commodities, relative to 1919 as 100, stood at 153 in September, as compared with 122 in August and 131 in September a year ago.

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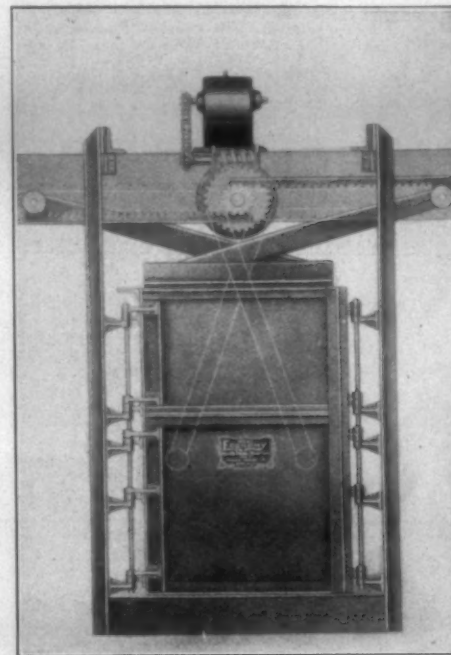
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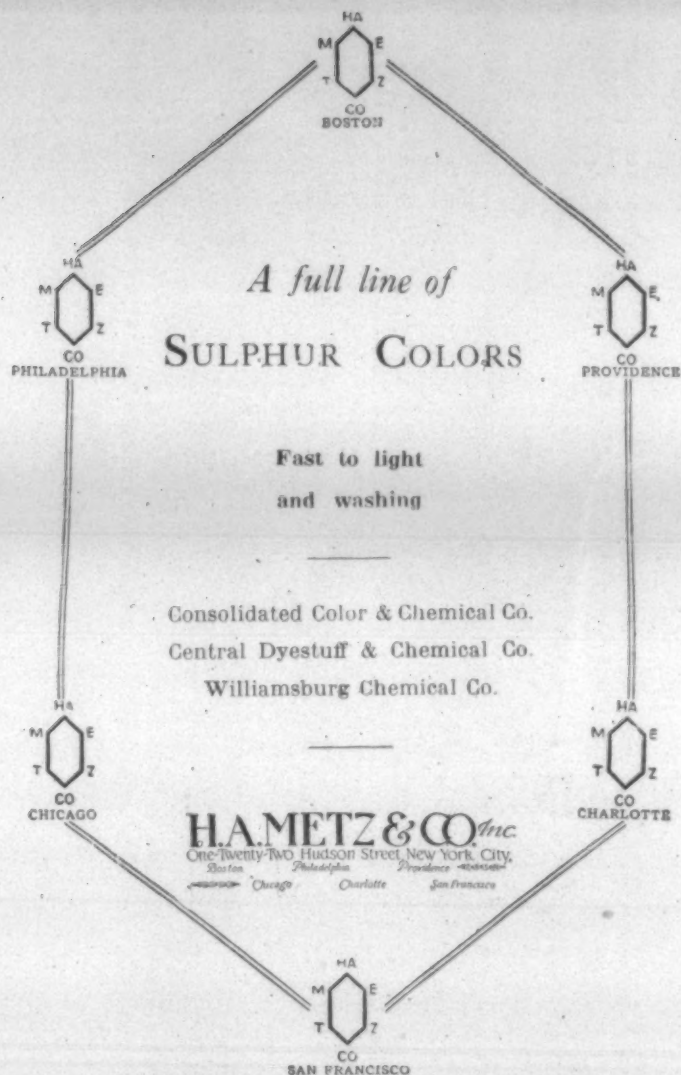
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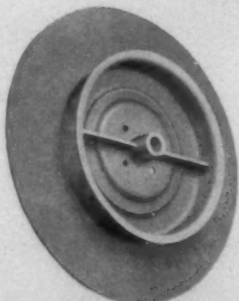
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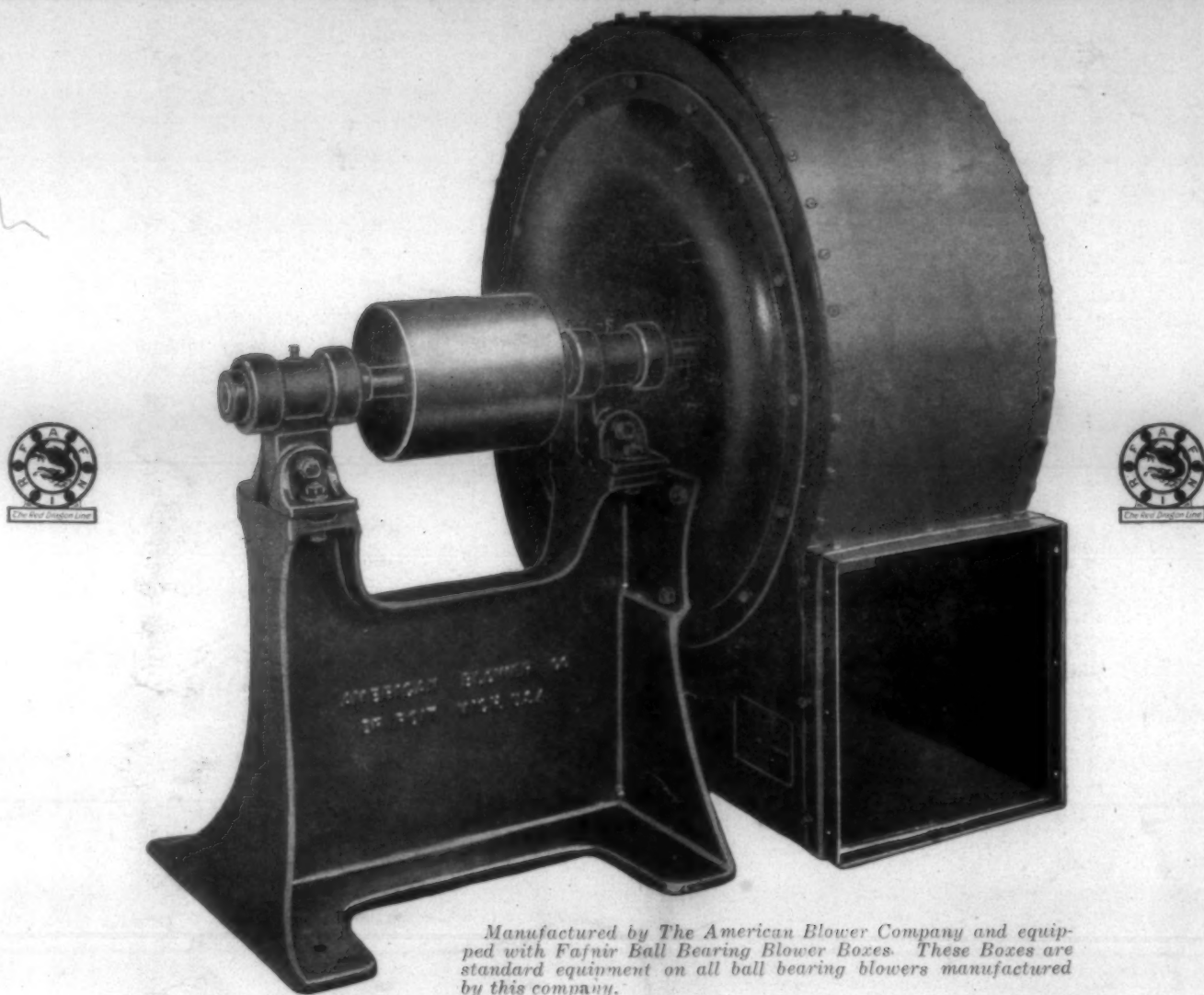


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